EAAE-ARCC INTERNATIONAL CONFERENCE

2nd VALENCIA INTERNATIONAL BIENNIAL OF RESEARCH IN ARCHITECTURE

11-14 NOV 2020

THE ARCHITECT AND THE CITY

VOLUME 2

UNIVERSITAT POLITÈCNICA DE VALÈNCIA

ESCOLA TÈCNICA SUPERIOR D'ARQUITECTURA

Publisher:

Editorial Universitat Politècnica de València, 2020
http://www.lalibreria.upv.es
ISBN 978-84-9048-842-3 (Set of two volumes)
978-84-9048-981-9 (Volume 1)
978-84-9048-982-6 (Volume 2)

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PAPER #7.20

BETWEEN RESEARCH AND TEACHING: IDENTIFYING NEW COMPETENCIES FOR HEALTHY CITIES

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ABSTRACT

Healthy Cities is one of the central themes addressed in the Sustainable Development Goals. The World Health Organization's new Urban Health Initiative creates a paradigm shift in health systems approaches by focusing on the urban environment as a prerequisite for healthy lifestyles - and disease prevention. In Europe, the Zagreb declaration pointed out its attention to strengthen and champion action on health through healthy cities networks. Architects and engineers play a strategic role in building this future and activating actions in key development sectors, like housing and transport, as well as in the settings where people live and work. This requires new professional figures with the hard and soft skills that stimulate urban transformation for healthier built environments.

The paper discusses a methodological approach to identify the competencies to be acquired by future practitioners. It is developed within an ongoing Erasmus+ project[1] that represents the contextual field for testing the method in three Bosnian Universities. The article describes the methodology and its application. It starts with designing analysis' grids to evaluate how the topic is currently addressed, and it builds questionnaires to evaluate the students' awareness. Moreover, the research investigates stakeholders through organized seminars and surveys to understand the labor market and social needs. The paper suggests a strategy for setting up new courses for future architects, urban planners, and engineers, experts of the healthy urban environment. Testing the method in the Bosnian context, one of the main indications is the importance of innovative teaching methodologies integrated with the use of practical experience and laboratories. The method proposed is replicable for curriculum development in Higher Education, and it highlights how the research is a fundamental base for designing and teaching academic courses.

KEYWORDS

Healthy city; architecture; engineering; competencies; higher dducation.

INTRODUCTION

Healthy City started to be a crucial topic in the last twenty years, because of the huge number of inhabitants in the urban area. All over the world statistical data confirms the growing trend: in 2018 55% of the world population lives in urban areas, and according to the last projection it is increasing to 68% by 2050. Europe is the continent with a high density of urban population, 74% in 2018 (UN 2019), despite its low rate fertility, population decline - it will decrease from 13 percent to 9 percent between 2018 and 2050 - and significant diversity in the urbanization levels of its countries.

[1] The Healthy URBan Environment Developing Higher Education in Architecture and Construction in Bosnia and Herzegovina - HURBE - is a CBHE project, co-funded by the Erasmus plus programme of the EU Union (2018-2021). The coordinators of each Universities are: Francesca Giofrè (lead coordinator), Sapienza University of Rome, Faculty of Architecture, Department Architecture and Design; Vesna Mikić, University of Zagreb, Faculty of Architecture; Milena Tasheva-Petrova, University of Architecture, Civil Engineering and Geodesy; Maja Popovac, Dzemal Bijedic University of Mostar; Senaida Halilović-Terzić, University of Sarajevo; Samir Lemeš, University of Zenica.

This scenario is having a strong impact in the city, in terms of consumption of resources, on the system of spaces, on the demand for services, on the health, and on social relations. At the global level among the Sustainable Development Goals, the 11th goal "Make cities and human settlements inclusive, safe, resilient and sustainable" stresses the importance of the planning and managing processes of the city. These processes can produce a significant difference and have effects on the health of their residents (Lancet 2012, 3), as confirmed by several scientific studies in the last 150 years (GNRUHE 2010). The European Healthy Cities Network launched in 1986 by the World Health Organization (WHO-EHCN), and now at its VI phases, plays a strategic role in promoting policy and plan in European urban areas, positioning in its core the notion of the 'health' of the inhabitants.

Health, according to the evolution of the concept, is defined as "a state of complete physical, mental, and social well-being" (WHO 1948) "and not merely the absence of disease or infirmity" (WHO 2005); it is a positive concept and it is a human right. Moreover, according to the Meikirch Model health "is a dynamic state of well-being emergent from conducive interactions between an individual's potentials, life's demands, and social and environmental determinants. Health results throughout the life course when an individual's potentials – and social and environmental determinants – suffice to respond satisfactorily to the demands of life. Life's demands can be physiological, psychosocial, or environmental and vary across individuals and contexts but, in every case, unsatisfactory responses lead to disease" (Bircher and Hahn 2017). In fact, the state of human health would be conditioned by 50% of their behaviors and lifestyles, but also environmental factors (20%), genetic factors (20%), and health care (10%) (Amara, Bodenhorn and Cain 2003).

The environmental determinants include the whole biosphere, in other words, the environment people need for their daily life as nutrition, recreation, work, move, etc.; the environment is made by water, air, soil, housing, buildings, streets, routes, greenery, and so on. In general term healthy city is defined by the Health Promotion Glossary the "one that is continually creating and improving those physical and social environments and expanding those community resources which enable people to mutually support each other in performing all the functions of life and developing to their maximum potential."(WHO 1998).

Analyzing the documents produced by the European Healthy Cities Network and in particular the Zagreb Declaration (WHO-EHCN 2003, 2009) it is possible to define the intervention areas for urban planners, architects, engineers, but not only for these professionals. These documents identified their space of action in creating and design the healthy urban environment, aiming to offer "a physical and built environment that supports health, recreation and well-being, safety, social interaction, easy mobility, a sense of pride and cultural identity and that is accessible to the needs of all its citizens" (WHO-EHCN 2003). The related issues that integrate the concept of health, and that interest those experts are: urban planning; housing and regeneration; transport; climate change and public emergencies; safety and security; exposure to noise and pollution; urban design and creativity and livability (WHO-EHCN 2009, 5-6).

The themes are several referring to disciplines involved and to various scales of interventions (citywide, neighborhood and local environment), and they are all strictly connected and influence each other. Furthermore, the cities are "the example par excellence of complex systems: emergent, far from equilibrium, requiring enormous energies to maintain themselves, displaying patterns of inequality and saturated flow systems

that use capacity in what appear to be barely sustainable but paradoxically resilient networks" (Hancock and Duhl 1986, 1988), and the scholars are still on researching a proper methodology for assessing the impact and outcome of actions to build a healthy city. There is a principle of interdependence between the various policies that can no longer be neglected, and the 'construction' of the Health City represents a long-term urban and territorial planning process (Giofrè and Đukanović, 2017).

In this framework, Sapienza University of Rome, Faculty of Architecture, is leading the European Project in the area of Capacity Building in Higher Education, co-founded by the Erasmus+ programme, titled 'HURBE - Healthy URBan Environment Developing Higher Education in Architecture and Construction in Bosnia and Herzegovina" with the Universities of Architecture and Civil Engineering of Zagreb, Sofia, Sarajevo, Zenica, and Mostar. Among the general aims of the project, there is to improve the quality of higher education in the universities of Bosnia and Herzegovina (BiH) by focusing on curriculum development in the topic of healthy urban environment. The project is still ongoing (2019-2021); it is the field of experimentation to discuss the topic of healthy city in an interdisciplinary vision, and to propose and apply a methodology to identify new competencies and how to transfer them, through innovative means, to urban planners, architects and engineers of the future, called to participate in the planning and design process of protecting and ensuring the health and wellbeing of people living in cities.

1. A METHODOLOGICAL APPROACH TO DEFINING NECESSARY COMPETENCIES IN HEALTHY URBAN ENVIRONMENT

The methodological approach was planned to identify the competencies to be acquired by future practitioners - urban planners, architects, and engineers - that design healthy environments from neighborhood to building scale, in order to design specific academic courses within the existing curricula in BiH's Faculties.

Therefore, the methodology aimed to reach these objectives:

1. Understand how the topic of 'healthy cities' is currently dealt with in current university curriculums.
2. Evaluate the student's awareness and perception of the theme.
3. Discuss stakeholders and local experts' opinions and potential of the topic development.

Necessary tools were developed to reach these objectives, and after their application, the results were compared to identify the necessary competencies. First, designing analysis' grids to evaluate the topic in curriculums, and workshops with the Bosnian project team to collect their opinion. Second, design and carry out questionnaires that investigate the Bosnian student's awareness. Third, organize Bosnian stakeholders' meetings and surveys to discuss the theme with the labor market and social needs.

1.1. Evaluation of the faculties' courses: grid questionnaire and workshop

A grid questionnaire on how the theme 'Healthy Urban Environment' (HURBE) is addressed within the existing teaching courses was elaborated. The grid aimed to analyze the whole syllabus studies and the teaching modalities in the degree programmes of the three Bosnian faculties. The grid was prepared by Sapienza University of Rome. It was composed of descriptive tables articulated in two sections. The first section collects general information about the typology of degrees (i.e. duration of the course, total number of university educational credits - CFU; number of students enrolled; methodology of enrollment and selection; main competencies acquired; scale of classes; grading and of final

thesis discussion; articulation of CFU between teaching, individual study, laboratory activities, traineeships, etc.). The second section provided specific information about each course in terms of CFU; scientific disciplinary sector; learning outcome; typology of course (i.e. compulsory or elective); typology of attendance (i.e. mandatory or not mandatory); teaching methodology and tools used (i.e. slides, video, oral lecture, reviewing design, etc.); evaluation method (i.e. final written test, mid-term, written test, oral evaluation, project evaluation); main literature and position of the course in the curricula.

Given that architecture and civil engineering share the same broader area (i.e. organizing building, space, and environment), all three faculties already offer courses that include some aspects of environmental sciences and/or courses on technological means to preserve our environment and create healthy urban settings. At the University of Sarajevo (UNSA),[2] Faculty of Architecture, there are 35 courses that contain topics that could be - in minor or major proportion – discussing issues related to the HURBE, distributed as follows: 7 out of 68 courses in the first cycle (Bachelor), and 28 out of 97 courses in the second cycle (Master). Within the Bachelor cycle, the number of CFU of the topic HURBE related courses is 20 CFU out of 180 CFU. Strangely, the number of HURBE related courses in the Master was estimated to be 145 CFU and the total university educational credits needed to obtain the degree are 120 CFU. This is due to the variety of elective courses at the Master level, many of them were considered to discuss issues related to the healthy urban environment in a minor or major proportion. In UNSA, HURBE related topics include bioclimatic architecture and urbanism, resilient architectural design, human-oriented city, green design, renewable energy, and low-energy housing.

At the University of Zenica (UNZE),[3] Faculty of Polytechnic, Civil Engineering, there are 7 courses (4 compulsory and 3 electives) which contain topics that might be -in minor or major proportion- related to HURBE. They are in the first cycle (Bachelor) courses. Within the Bachelor cycle, the number of CFU of HURBE related courses is 16 CFU out of 240 CFU. HURBE related topics include solving civil engineering problems as the design and dimension of structures, plan and supervise building operation, air pollution, management of water supply and drain of water waste, natural and energy efficiency and energy optimization.

Unlike the previous two universities, which have one Bachelor programme and one Master programme; the University of Mostar (UNMO),[4] Faculty of Civil Engineering has one Bachelor programme and three Master programmes – general, structural and hydro-technical. Only the general master programme includes 6 out of 36 courses that contain topics that could be -in minor or major proportion- related to HURBE. This represents 29 CFU out of 120 CFU. HURBE related topics include water and environmental protection, energy-conscious retrofit of historical objects and urban ecology. soil and water pollution control, waste management, energy efficiency in construction and alternative energy sources, traditional and new building materials.

The grid showed the potential proportion of courses - through the number and CFU - that might include and discuss aspects related to the healthy urban environment. The theme is quite broad, and many arguments can be considered related to healthy urban environment. This is probably the reason that UNSA's Master programme was considered to have a high number of courses related to

[2] UNSA's education process is conducted in three cycles (3+2+3): The first three-year cycle (180 CFU) leads to the title of Bachelor of Architecture. The second two-year cycle of studies (120 CFU) leads to the title Master of Architecture. The third three-year cycle of studies (180 CFU) leads to the title PhD in the Field of Architecture and Urban Planning.
[3] UNZE's education process is conducted in two cycles: The first cycle is 4-year Bachelor of Civil Engineering (240 ECTS). The second cycle is 1-year Master of Science in Civil Engineering (60 ECTS).
[4] UNMO's education process is conducted in three cycles (3+2+3): The first three-year cycle of studies is a Bachelor programme of 180 CFU. The second two-year cycle of studies is a Master programme of (120 CFU). They also have a PhD programme of 3 years (180 CFU)

the theme. Further analysis of each course content can help verify the actual proportion of the theme within these university courses.
The grid provided a general indication of the general themes that each faculty chooses to integrate into their educational path. The analyzed faculties share common aims of creating sustainable infrastructures and structures for healthy urban environments. The approach and topics of HURBE differ in each one depending on the faculty's educational mission and their fields of research. Even though the names of some courses can be similar (e.g. energy efficiency) in the three faculties, the teaching approach and content may significantly differ due to the various subjects and methods of different disciplines.
The results of the previous analysis' were presented to the project participants in a workshop,[5] and the main consideration was that the topic of 'health' and its relation and impact on the urban environment is vast and there is a lack of focus on the theme. It might be discussed within other courses, but it is not well identified or defined as a central topic. During the workshop participants discussed the topic and its content, having in mind the aim of setting up new courses in the existent degree programmes. They tried to identify the common competencies needed for future urban planners, architects, and engineers related to the subject - area, applying the matrix of Tuning with Dublin descriptors.[6] The first results were the identification of two typologies of competencies, 'basic' and 'advanced', that should be transferred in different phases of the degree programmes.

1.2. The students' awareness of HURBE: the questionnaire

The questionnaire on "Healthy Urban Environment: the Bosnian students' awareness" was prepared through a workshop of 18 project members, three of each faculty.[7] It aimed to investigate how the Bosnian students attending the universities perceive the topic of HURBE and evaluate the experience they made during the courses they attended. During the workshop, the attendees were divided into three groups and each group prepared a set of questions. A matrix was organized to compare all the questions and extract the ones everyone seemed to agree on - repeated and/or most significant questions - and elaborate the first draft of the survey. The survey's structure and content were developed and discussed jointly by email to elaborate the final version, using simple and 'familiar' words to facilitate the student's comprehension of the questions.
The questionnaire was articulated in 25 questions with different typologies of answers: closed, multiple responses, or on rating scale. It was divided into two sections. The first part provided general information about the participants' sample (6 questions). The second section investigated the general knowledge and opinions about of HURBE (19 questions).
Initially, the survey was prepared through Google Form to allow further communication via email with the students and facilitate the data elaboration and analysis. However, the three faculties had to translate and print the questionnaire to share it with their students in class. UNZE and UNMO filled a google form after, while UNSA filled an excel file. The sample interviewed consisted of 216 students distributed as follows: UNSA, UNMO, and UNZE filled 97, 53 and 66 surveys respectively. Most of the students that filled the questionnaires attended the third and the fourth years of their studies (75% of the sample) and only 8% of students had international study experience abroad. 63% of the sample were females, which is in line

[5] On the 'credit transfer meeting' hold in 13-17 May 2019, Sarajevo (Bosnia and Herzegovina) at University of Sarajevo.
[6] Tuning Educational Structures in Europe is a Guide to Formulating Degree Programme Profiles, but the project participants adapted it and applied it to the scope of the workshop, setting up courses.
[7] On the 'kick off meeting' hold in 11-13 February 2019, Rome (Italy) at Sapienza University of Rome
[8] According with EUROSTAT in 2017 women accounted for 54 % of all tertiary students in the EU-28.

with the general European trend in the tertiary education level.[8] 40% of students do not live in the city where they attend university, which highlights the importance of integrating new modalities of teaching as online courses.
The results of the survey on general knowledge and opinions about HURBE showed the following: 92% of the students did not hear about 'Zagreb declaration' and only 44% heard about the sustainable development goals, mostly through the internet. They answered that they were the ones responsible for their health (38%), after medical professionals (25%), family (20%), and the urban environment (11%). 48% believe that the environment's effect on their health is negative. 77% of the sample is aware that their future professions are linked to health urban environmental issues, and 77% believe that the building design is important for health. The elements identified to have an impact on health are natural elements: ventilation, light, and greenery, followed by the building materials respectively. 87% think that CO2 is a pollutant. Energy production followed by transport were voted the sectors that most contribute to pollution. 23% answered that the healthy urban environment was found to belong to planning and design, engineering and architecture; 9% voted that it belongs to healthcare services, 4% for economy and politics, and 63% voted that it belongs to all these factors together.
When having to choose up to two types of experts that could contribute to a healthy urban environment, 127 answers identified architects and engineers, 48 chose medical experts, 28 chose social workers and 108 chose all of them. 90% voted 'yes' that the topic is important for their future profession. All participants voted that technical architecture and urban planning are necessary for the architects and civil engineers to achieve a healthy urban environment is, 126 voted for social anthropological skills, and 35 chose medical skills.
When they had to choose their three preferred methods of learning about the topic, 174 votes were given to practice followed by 164 votes for laboratory activities. 73% believe that their future work is linked with ethical principles, 17% don't know and 10% do not think so. Most of the students feel they are not well informed on the impact of the building process on human health; 36 % of them are not sure and 27 % answered not at all and not enough. Also, 72% of students indicated that they would like to attend a course at university on this topic.

The results of the questionnaires highlighted that the students lack the awareness and knowledge of the theme. Almost all of them never heard about 'Zagreb declaration', even if they are aware that the environment could have a negative impact on their health. The positive aspect was the demonstrated interest by most of the students and their awareness of the importance of learning new HURBE skills; they are interested to learn about the topic and participate in the course. They also underlined that they need practice and laboratory activities to acquire all the skills for their professional future.
All the analysis's results were presented and discussed through open debates[9] among the academic staff member of HURBE project in order to the content of future courses.

1.3. The stakeholders' opinions: labour market and the social needs

The stakeholders' meetings aimed to provide indications and guidelines related to the labour market needs in the specific context of BiH; the public sector's tendencies, approaches, and strategies; and the community and social groups' needs. Moreover, it aimed to discuss the structure and topics, to be developed, in HURBE courses, increasing networking and creating agreements with stakeholders.
The strategy, structure, and content of the meetings were discussed during a workshop[10]

[9] On the 'Project meeting' hold in 5-7 September 2019, Zagreb (Croatia), at University of Zagreb.
[10] See note 9

among the academic members from the six project faculties. The stakeholders were identified: architecture/construction studios, companies, etc.; national public institutions (Ministry of Environment, Ministry of Housing/ Planning/Infrastructure, Ministry of Health, etc.); local public bodies (city administration representatives, etc.); international organizations (World Health Organization, EU agencies, etc.); labor market entities and others.

The project members decided to design a questionnaire for the stakeholders, to be filled at the beginning of each meeting, with ten multiple-choice questions. The first seven questions were general and common for everyone. Then, there were three questions that were specific for the representatives of the private enterprise, the representatives of the public sector, and the civil society representatives. Each Bosnian university was asked to include at least 10 stakeholders in the meeting. They prepared their lists of stakeholders to invite them via email, phone calls, and personal contact. It was decided to organize three meetings in three days, each day in a different Bosnian university - Sarajevo, Zenica, and Mostar – facilitating the participation and logistics for the stakeholders of each university's city.[11] In each meeting, a local academic representative coordinated the meeting's activities in their home institution. The total number of participants in the three meetings is 64 persons, including academics staff members; 25 of these were the actual external stakeholders that are not part of the project institutions.[12]

Each event started with the general presentation of the project objectives, followed by the discussion of the structure and topics for HURBE course, and then the questionnaires. After that, there were open discussions that focused on the results of the questionnaires and the potential of collaborations between the stakeholders and the Bosnian universities. The meetings also concentrated on the local experts' feedback regarding the importance of integrating HURBE topic in the Architecture and Civil Engineering curricula, the future contribution it could provide for the local labor markets, and the potential role of the laboratories services that Bosnian universities are installing with equipment dedicated to the theme of healthy urban environment.

Some of the questionnaires and discussions results were common in the three meetings and others were relevant to the specific contexts of reference. All stakeholders agreed on the importance of raising awareness of the healthy urban environment at the university level. They remarked the significance of the gap between the practical skills of recently graduated students and the needs of labour market. The structure of the proposed HURBE courses has to be pragmatic and has to provide content that would enable the graduates to link their acquired knowledge with other relevant influential sectors in the job market. With the inclusion of ethical issues as well as the practical experiences (visit to construction site, use laboratories' equipment, etc.), they believe that HURBE course can cover the various topics of healthy cities. Most of the stakeholders indicated the importance of the laboratories that can provide services for external entities and support the courses. Some have demonstrated interest in using the laboratories' services based on defined agreements with regulations and fees. Others offered their support to the academic staff and the students; they would provide objective observations and assist the teaching processes through the integration of their professional knowledge.

[11] The stakeholders' meetings took place as follow: on the 19 June 2019 at University of Sarajevo, on 20 June 2019 at University of Zenica, and on 21 June 2019 at University of Mostar.

[12] At University of Sarajevo, where 18 persons attended the meeting: 2 from private companies, 2 from public institutions and public utility companies and 11 from the University of Sarajevo. At University of Zenica, the meeting was attended by 21 persons: 2 from private companies, 7 from public institutions and public utility companies, 5 from other project partners, and 7 from the University of Zenica. At University of Mostar, the meeting was attended by 23 persons from following areas: 2 from private companies, 7 from public institutions and public utility companies, 3 form NGOs and 13 from education.

In each meeting, the stakeholder's contribution was also influenced by the given urban context where the meeting took place and the university's profile. In Sarajevo, the external participants recommended that HURBE courses focus on common problems of the metropolitan regions. They have to discuss the infrastructure and urban planning, traffic problems and the importance of bioclimatic architecture and public greenery. In Mostar, the stakeholders concentrated on climate change, urban pollution, water, and waste management issues which are evident there. In Zenica, the focus was on the importance of enhancing the city's nature, the impact of the industry and the air pollution it causes. These results provided necessary external feedback in relation to the course's proposed content. Some of them confirm the students' questionnaire results, others provide additional info. They confirmed the importance of the practical experience and the role of the laboratories to link the university with the job market.

2. MERGING THE RESULTS AND DISCUSSION

The methodology discussed shows how the used tools, including all the actors in the process, is necessary for defining new learning content and teaching methodologies to build up new courses in existing degree courses. It demonstrates the importance of integrating training and practical experiences for the development of well-prepared professional figures, increasing their employability.

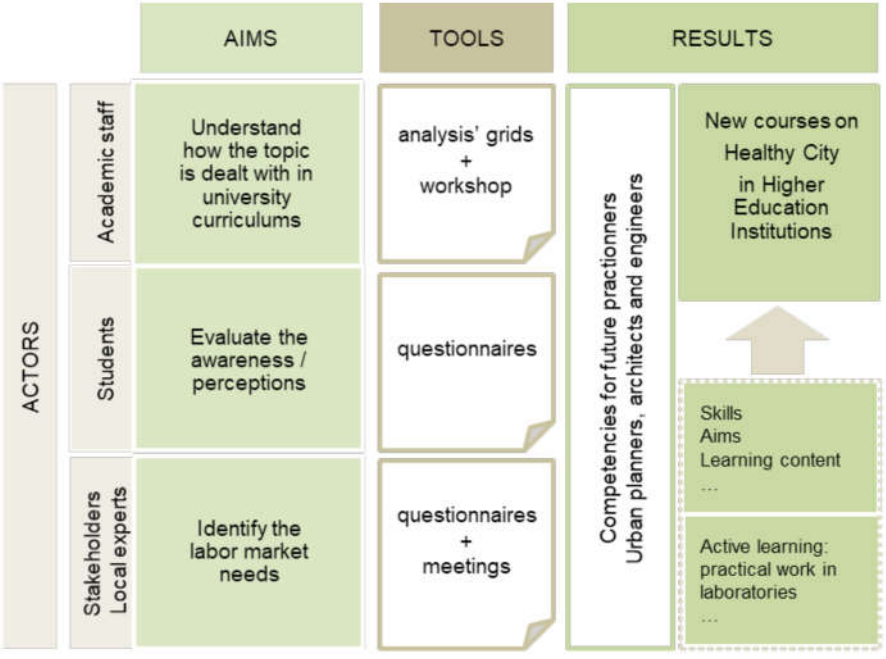

Figure 1. Methodology applied for developing course in Higher Education Institutions on Healthy Urban Environment: Actors, Aims, Tools, Results. Source: (Authors 2020)

Each tool provided an understanding of how the topic of Healthy Urban Environment is a transversal topic to all the disciplines taught in the existing degree courses and consequently diluted in different subjects, with different inflections.

The three tools' results provide a set of common indications. They all showed that there is an absence of a deep understanding of the topic including the concept of health and its effects on the built environment.

Although the students and stakeholders are aware of the importance of the theme on a professional, social and personal scale, the curriculum analysis has shown that the curriculums lack the in-depth recognition of the theme's content and knowledge. The positive aspect, however, is that students are aware of their lack of knowledge of the topic. They are interested in acquiring this knowledge and complementing it with practical training, as they believe it will play a strategic role in their future practices.

The stakeholders' meetings' outcomes stressed that each Bosnian faculty should be able to maintain the balance between the interdisciplinarity of the theme and their specific mission as architecture or civil engineering faculties. They also stated that it is important to link the university teaching curricula, and the new courses on HURBE with the needs of the labor market in the place/context where the universities are located. In fact, the cities of the Bosnian universities involved, even if the country is one of the smallest in Europe, have different urban environments and different problems.

All the stakeholders underlined the strategic role of the laboratories, as a space for active and practical learning, providing the possibility of applying academic research and other activities on the territory.

This role corresponds perfectly to the rising relevance of the universities 'Third Mission'[13] of generating knowledge outside academic environments to the benefit of the social, cultural and economic development, in dealing with the territory and the society, performing activities and projects to strengthen dialogue and interaction among university, industry, and society.

Based on the evaluation of the faculties' courses and the stakeholders' feedback, the academic members decided to divide HURBE course into two interdisciplinary modules with different aims to gain professionals soft and hard skills. The basic module, focusing on theoretical interdisciplinary knowledge and the advanced module, concentrating on practical and design activities. The basic module, HURBE I, will be common among Faculties, allowing the possibility to create an interdisciplinary space for intra-country students and academic staff mobility with the presence of practitioners as teachers too. The main learning outcome is understanding the impact of planning and designing on the urban healthy environment at the different scale; in a wide terms, the students develop the sensibility to put in the core of the actions the 'health of people' and the consciousness of the importance to including and empowering the people in the making process for a Healthy City.

The advanced module, HURBE II, will be specific for each faculty, concentrating on its urban environment context, and adopting the laboratories as a resource for practical teaching and design activities. The learning outcomes are specific in applying methods, instruments and tools to planning and design, starting from the population's health data, and in evaluating the impact on the health of people.

The methodology discussed and its results reconfirm the added value in maintaining a strict link between Education, Research and Third Mission activities. This connection enriches the learning process, and it is necessary for the success of the university courses.

[13] The University has three missions: the first mission is Teaching, the second is Education.

CONCLUSION

There is rapid evolution of the body of knowledge, teaching and teaching methodologies. Information and communication technologies have had a significant role in changing the whole system of processes to develop professional figures that are up to date and able to stimulate urban transformation. With the development of social needs and life demands, even the concept of "health" is modifying and becoming closely relevant to the profession of architects and engineers. The Faculties of Architecture and Civil Engineering are struggling to cope with these rapid changes and prepare professional figures that possess the necessary knowledge. In addition, universities need to follow the paradigm shift from the "Teacher-Centered model" to the "Learner-Centered model" (Bishop, Caston and King 2014).

This paper underlined the importance of various elements in developing a learning process. Future architects and engineers have to be able to deal with the evolution of 'hard changes' (i.e. new materials, methods of producing them, etc.) and 'soft change' (i.e. equipment and software as Building Information Modelling, etc.). It is important to update existing architecture and engineering curricula with new content, integrate practical experience like laboratories and develop links with the labor market and social needs.

By applying the indications and results of the proposed methodology, the new professional figures should develop a set of hard skills (knowledge of the topic, using laboratory equipment, etc.) and soft skills (communicating with the labor market representatives, decision making, etc.), filling a gap between education and relevant professional requirements. These future practitioners should be able to stimulate urban transformation for healthier built environments and capable of adapting to the continuously updating environmental and social changes.

Designing healthy urban environments is a challenge that requires the ability of critical thinking to position the concept of health of the inhabitants in the center, in accordance with a given context. It is an action of dreaming about the future of the city. It is a process of co-creating and co-dreaming that involves all actors (academic staff, researchers, stakeholders, inhabitants, etc.) and, in a broader meaning, the whole sectors of civil and political society. The article aspired to participate in that action, its actors and results are representative of the Bosnian context - within the framework of the European Commission's co-funded Erasmus+ project - however, the methodological approach provides guidance and can be replicable for other curriculum development projects for a healthy urban environment and/or other topics in Higher Education.

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