



Pedagogical innovation in Architecture: transforming the curriculum to face the challenges of the future

Sonia Parrales Rodríguez¹ [0009-0004-6920-4957]

Maureen Coto Alfaro² [0009-0000-4458-8262]

¹ Universidad Autónoma de Centro América

Abstract

This paper presents the methodology that was followed for the curricular redesign of the Universidad Autónoma de Centro América, with an approach based on research, innovation and foresight. In addition to the comprehensive evaluation of the curriculum, the process includes global trends in the training of professionals in Architecture, the analysis of the SDGs, the Tuning Latin America project, as well as the perspectives of various sectors related to the discipline. As a result, a panoramic view of the characteristics and repercussions in different areas of professional practice is obtained; in this way, a model is built, identifying the impact variables and their indicators. As a learning strategy, the Transversal Design Workshop is implemented, based on Problem-Based Learning, with a structuring of the contents that considers the sequential, progressive and spiral model, which implies a journey in which students internalize interconnected knowledge of increasing complexity, based on a real situation.

KEYWORDS: CURRICULUM DESIGN, ARCHITECTURAL DESIGN, INNOVATION.

Introduction

Since 1968, the Faculty of Architecture of the public university was formally established. However, by the mid-1970s, entry to higher education was becoming a difficult goal to achieve for a large majority of students, due to a high demand for higher education [1]. At this time there was a significant increase in private academic offerings, including the opening of the Universidad Autónoma de Centro América in 1976.

With the creation of the National Higher Education Accreditation System (SINAES), by Law 8256 [2], the accreditation of university careers and programs is established as a priority, so that they meet quality requirements, based on a model of 21 components, 179 criteria, 38 standards and 373 evidence [3]. In 2010, the University voluntarily joined SINAES, and in 2021 the Architecture degree was accredited.

In this context, the University makes resources available to the program as a priority to update the study plan, whose design was conceived in 1985, so it did not respond to the contextual needs of the country or the state of the art. of discipline.

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Theoretical framework

According to the International Union of Architects [4], Architecture involves everything that influences the way the building environment is planned, designed, made, used, furnished, landscaped and maintained. Diverse characteristics such as climate, topography, hydrology, seismicity, landscape and cultural roots have shaped and conditioned the professional performance of Latin American architects [5]. For their part, objectives 9 and 11 of the 2030 Agenda for Latin America and the Caribbean [6] directly relate the actions that must be developed from Architecture, while objectives 12, 13, 14 and 15 do so indirectly.

Methodology

To redefine and update the curriculum, research was carried out to substantiate the various curricular elements: updating the theoretical perspective of the curriculum, construction of the state of the art of the discipline, analysis of the national and international educational offer based on thematic axes, characterization of the union, analysis of the field of action and analysis of the Latin American and Costa Rican context.

For the analysis, the Tuning Latin America Project [5], the 2030 Agenda Latin America and the Caribbean [6], the perspective of national architects, the construction sector and development companies were taken as reference, with the aim of making a construction of the evolution of professional practice in Costa Rica, and the trend in architectural teaching methodologies, among others. In addition, a prospective study was carried out to measure the level of intensity of the problems that the graduate will face over a period of 5 years [7].

Results

Curriculum design

From documentary research, the national and international context and the opinion of experts, a panoramic view of the characteristics and repercussions in different areas of the practice of Architecture is obtained. As an achievement, the way of inhabiting the architectural and urban project, characterized by sustainability and resilience, is determined as the ultimate goal. The challenges that the Architecture graduate will face include an increase in the differences between social and economic groups in Costa Rica, as consequences for the government's investment in social housing. Regarding urban planning and infrastructure, experts visualized a significant deterioration of buildings in the main cities and heritage buildings, due to the lack of inter-institutional coordination and the increase in construction materials. Under these and other premises, the object of study of curricular redesign is defined.

Teaching methodology

The Architecture workshop is the traditional pedagogical model that simulates professional practice, where students learn by solving problems of hypothetical cases [8]. In the methodology implemented at UACA Architecture program, practicing architects are tutors who guide the learning process, and the contextualization of the architectural design occurs in a real space that the students must characterize with documentary information and visits to the site in a group manner, at the beginning of each semester.

Based on research and preliminary studies, students at each level must formulate an architectural concept that manifests itself in the different phases of the design process, according to the level that the student is studying, with a systematic and progressive degree of complexity. Research is a prerequisite to generate ideas, to organize them, select them and synthesize them into what subsequently becomes a formal design proposal.

Discussion

From the curricular redesign, in the epistemological foundation of the Architecture degree, the design process is conceived as the cultural or material transformation, into an object that satisfies the needs of the user (the subject), according to the context and the variables, that are specific to the object. Therefore, the pedagogical model is based on the methodological model of architectural design that includes different stages and processes, to result in a solution that can be built and habitable by humans. The solution reached with said model must also satisfy all types of needs in a comprehensive manner.

Conclusions

Given the immediacy of the modern world, the versatility of materials, construction systems, environmental challenges, among others, new didactic methodologies are chosen for teaching the design process, which allow the development, enhancement and integration of creativity, intuition and imagination of each student, with the objectivity, rationality and accuracy of science and its technological developments.

The pedagogical model must work hard to develop skills from the four basic faculties that characterize every human being; that have allowed mankind to apprehend and modify the natural environment in which he/she is immersed, creating and assimilating the function that Design has had within the cultural development of societies [9].

Limitations and future researches

The redesign and implementation of a curriculum involves multiple challenges and limitations, both from the academic, administrative and social spheres. Future research that allows adapting the skills required in professional practice will be one of the tasks proposed by the degree.

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