REFLECTIVE TRAINING: DILEMMAS OF BRAZILIAN HIGHER EDUCATION PROGRAMS IN ARCHITECTURE AND URBANISM

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Abstract

To meet current demands, Architecture &City Planning professionals needs to rethink their role in society, with special attention to social and ethical issues, aiming to provide improved quality of life to human beings. This transformation is directly associated with new forms of learning. This article aims to present and discuss the training of reflective, creative, and cooperative professionals, based on discussions on reflective teaching, education by research and the ethical issue in Architecture & Urban Planning programs in Brazil. As a methodological approach the research is based on in-depth analyses of documents such as the Latin American Episcopal Conference [CELAM], and the UNESCO-UIA Charter for Architectural Education. As main results and contributions are reflections and discussions aimed at restructuring of the way Architecture & Urban Planning is taught in Brazil, seeking the training of reflective, creative, and cooperative professionals, who can act more humanely, ethically and with greater social action.

Keywords: Architecture teaching, reflective teaching, ethical and social architecture.

1   INTRODUCTION

In the last decade, the teaching of Architecture & Urban Planning in Brazil has undergone several changes influenced by issues such as: laws of the Brazilian Ministry of Education, resolutions of the Council of Architecture & Urban Planning in Brazil (CAU), peculiarities of public or private Higher Education Institutions (HEIs), or even by the current increasingly globalized and competitive professional market. These factors, directly or indirectly, influence and direct the reorganization of the teaching of Architecture & Urban Planning in the country, aiming at the continuous structuring of curriculum matrices, programmatic contents and especially new methodologies for teaching and learning. The role of the Architect and Urban planner in Brazilian society also changed significantly, especially with the concern as to training architects and urbanist with a vision for improving the quality of life of human beings, rethinking their acting on society, mainly on social and ethical issues. Thus, discussing the forms of learning through practical-reflective teaching [1] fundamental for the quality of the training of Architects and Urban planners in Brazil.

What do we expect from the teaching of Architecture & Urban Planning in Brazil? What is the importance of training professionals with social and ethical commitments that meet contemporary demands? What is the necessity of training reflective, creative, and cooperative professionals who fit the profile of the current job market? How to teach in a globalized world and a society in networks driven by media and social networks? In an attempt to contribute to the discussion, this article aims to address the training of reflective, creative and cooperative professionals, based on discussions on reflective teaching [2], education by research [3] and the ethical issue in higher education [4]. These discussions shed light on reflections on what kind of professional we want for the future and foster new research on the teaching of Architecture & Urban Planning in Brazil.

Literature review

Initially this article presents a reflection on what we expect from the teaching of Architecture & Urban Planning in Brazil, especially based on the statement in the UNESCO-UIA Charter for Architectural Education. This document, written in 1996 and revised in 2004 and 2011, aims to create a global

architectural education network aimed at sharing all relevant architectural and urbanistic issues in this context.

According to the Charter for Architectural Education [5] In addition to all aesthetic, technical and financial aspects, to professional responsibilities, the main concerns expressed, by the Charter, are related to the social commitment of the profession, that is, the awareness as to the role and responsibility of architects in their corresponding societies, as well as improving the quality of life through sustainable human settlements.

Currently there is great concern in training architects-urban planners with a broad and complex vision that can contribute to improving the quality of life of human beings [6]. Rethinking the role of this professional to understand society is of paramount importance for the training of reflective, creative, and cooperative professionals who aim at the development of a better and fairer society.

According to the Charter [5], the architects' role is very clear and one of its objectives is to improve the theoretical and practical training of future architects. The architects, involved with the evolution of the quality of the built environment in a rapidly changing world, believe that everything that has an impact on the way the built environment is planned, designed, manufactured, used, equipped, configured, and maintained belongs to the domain of architecture. We feel responsible for improving the theoretical and practical training of future architects to enable them to meet the expectations of 21st century societies around the world as to sustainable human settlements in each cultural context.

In Brazil, it would be important that architects and urban planners rethink their professional work [7]. Some areas of operation of architects begin to become saturated and others are forgotten. Areas of great importance such as social housing and adequate basic sanitation for the low and low middle classes are uninteresting for most newly graduated Architecture & Urban Planning professionals. Influenced by the market and by the professional status, many professionals aim only to develop projects in areas with more elitist foci and that theoretically have a better financial return. However, this should be rethought, mainly because of the country's social needs, the large amount of graduated architecture professionals, and the decline in the real estate boom.

According to the [5] there are opportunities to conduct new tasks for the profession, as architects become aware of identified growth needs and opportunities provided in areas that have so far not been an important concern for our profession. Therefore, greater diversity is needed in the exercise of the profession and, consequently, in the theoretical and practical training of architects. The fundamental objective of the education is to train the architect as a generalist.

According to the demographic census provided by the Brazilian Institute of Geography and Statistics in 2010, 84.4% of Brazil's population is situated in urban areas. In Brazil's Southeast Region this percentage rises to 93%. Regarding permanent private households considering the type of sanitation (percentage distribution), 38.2% are inadequate or semi-adequate at national scale. In the country's North Region this percentage reaches 77.6% of households with inadequate or semi-adequate sanitation. It is important to note that, for that census survey, it is considered adequate sanitation when the household is supplied with water by general network, has sanitary sewer by general network or septic tank, and garbage is collected directly or indirectly. It is considered as semi-adequate sanitation when at least one form of sanitation is considered adequate and as inadequate sanitation when all forms of sanitation are considered inadequate.

There is great demand for architectural and urbanistic works for the poorer strata of Brazilian society [7]. Architecture & Urban Planning educators should rethink what they teach, require, stimulate, and address in the classroom [8], [9]. It is important to point out that we should not be against expertise areas considered more financially advantageous in Architecture & Urban Planning; however, it is important to train professionals to the complex thinking so that they are able to analyze and understand the issues around them and not only those that are more financially viable or more requested by the market. Future opportunities for the profession will be in the poorer population.

According to the [5] this applies particularly to those who work in the context of developing countries, where architects may accept the role of "facilitator" rather than "provider" and where the profession may still face new challenges. There is no doubt that the architects' ability to solve problems can contribute immensely to tasks related to community development, self-funded programs, educational equipment, etc., and thus ensure a significant contribution to improve the quality of life of those who do not exercise their full citizens' rights and who are not among the traditional clients of architects.

There is certain difficulty in implementing actions for developing the architect-urban planner's problem-solving capacity mainly due to the outdated way of thinking about the teaching and learning process.

The origin of this difficulty lies in the fact that, since childhood, man is taught and learns that thoughts and ideas should be conducted exclusively by reason, organization and through an a lysis addressed to achieving simplification rather than complexity [10] . This way of organizing and directing thought has historical roots and dates to the Enlightenment Revolution of the 17th century, recognized as the century of rationalism.

In Brazil's case, with its large territorial area and sociocultural diversity, maintains the simplifying thinking and does not stimulate complex thinking, through new teaching and learning strategies aimed at the training of reflective, creative, and cooperative professionals. Although understanding local problems through a global vision, there is risk of stagnation as a nation.

According to the [5] educators should prepare architects to develop new solutions for the present and for the future, because the new time will bring with it important and complex challenges due to social and functional degradation in many human settlements. These challenges include global urbanization and consequent exhaustion in existing environments, a severe shortage of housing, urban services, and social infrastructure, and increasing exclusion of architects from projects related to the built environment.

Moreover, these new solutions should consider the relation with the vicinity and its complexity, as well as architecture should evidence the quality of buildings and their harmonious integration into their surrounding environment, respect for natural and urban landscapes, as well as collective and individual cultural heritage are issues of public interest. In other words, it is in the public interest to ensure that architects can understand regional characteristics and translate the needs, expectations, and improvements to the quality of life of individuals, social groups, communities, and human settlements.

According to the [5] that training and learning methods for architects are diverse, to develop a cultural richness and allow flexibility in the development of teaching programs to meet the changes in demands and requirements of customers, of users, of the profession of architect, and of the construction industry, keeping attention as to the political and financial motivations behind such changes.

The discussion brought by this article aims not merely on criticising the status quo of traditional teaching paradigms. On the light of UNESCO/UIA charter guidelines we believe that the complex concepts of reflection, creativity and cooperation are key concepts that are already among the upmost advanced tools that professional education can count on. In that path, another professional profile must be pursued, in other to respond to the growing complexity of our contemporary world, even in developing countries such as Brazil.

2   METHODOLOGY

To understand the teaching of Architecture & Urban Planning in Brazil based on reflective, cooperative, and creative foundations, this bibliographic exploratory research was divided into two stages: (a) bibliographic review and concepts; (b) data research; and (c) data analysis and interpretation.

The first stage – (a) literature review and concepts, conducted theoretical study on reflective teaching based on [7], education by research addressed by [3], the ethics in higher education reported by [11] , the reflexive practice of professors studied by [12] and [13]. The second stage – (b) data research, consisted in the survey of information in two important documents: The Latin American Episcopal Conference [14] and the Charter for Architectural Education [5]. The third stage – (c) data analysis and interpretation, analyzed information collected in the bibliographic review and data research, to enable correlations and reflections presented in the following section.

3   RESULTS

To transform the reality of Brazilian higher education and, consequently, the training of its professionals, it is necessary that the entire transformation process (involving teachers, students and society) considers theoretical and practical changes aligned to the continuous self-reflection on the actions carried out in the classroom.

The changes should be seen positively, by students, professors, in the way of learning/ teaching, and mainly by institutional managers in the way of managing and directing this new form of education

within the Institutional Development Plan, the Institutional Pedagogical Project and the Program Pedagogical Project. This task should be done involving the various institutional levels focused on the training of reflective, creative, and cooperative professionals. Change cannot come solely from one side, but from the tuning of all actors belonging to the Higher Education Institution, with the purpose of resuming the University's true goal, which is to universalize knowledge [15]–[20]. Research results showed three relevant aspects as essential for these transformations: (a) the training of reflective, creative, and cooperative architect-urban planners; (b) education by research; and (c) the ethical issue in the development of research in Brazil. The possibility of training reflective, creative, and cooperative professionals proves to be crucial to social development. However, for this to be truly applied, a restructuring in the way of teaching and learning is needed [10], [21]. An intense education by research, combining theory and practice, stand out in this context, especially when based on ethical issues.

The training of reflective, creative, and cooperative architects-urban planners

The training of reflective professionals – architect-urban planners – requires prior training of reflective professor [22], [23]. Training reflective professors requires more than teaching how to think; it requires thinking in a complex manner [24]. This new way of teaching and learning, aiming at reflection, creation and cooperation within a society that experiences constant advances of communication and informational technologies, must be understood as a need for short-term and medium-term change.

According to [12] in terms of classroom, the professor's action appears as a theory and practice articulation. Articulation as they can organize their knowledge and translate it into force of action in the daily life of the classroom, and, while teaching, they not only transmit ready-made knowledge, but are able to lead to the construction and reconstruction of ideas and actions that can modify not only thought, but, consequently, social action thus becoming a transformative education.

According to the [5] architectural training develops the students' ability to conceive, design, understand and construct, in the context of the architectural practice that balances the tensions between emotion, reason and intuition by giving physical form to the needs of society and individuals. Architecture is a discipline that employs knowledge from human sciences, social and natural sciences, technology, environmental sciences, arts, and humanities.

For the development of reflection in the training of architects-urban planners, it is initially necessary to train professors who have clear understanding as to the concept of reflection; this is the key point of educational change. Several authors establish three different levels of reflection: technique, practice, and criticism.

According to [13] the first level corresponds to the analysis of explicit actions: what we do can be observed (walking in the classroom, asking questions, motivating, etc.). The second level implies thought and reflection: planning of what will be done, reflection on what was done, highlighting their didactic character. Finally, the level of ethical considerations, which involve the ethical or political analysis of practice itself, as well as contextual repercussions; this level of reflection is essential for the development of critical awareness in professors as to their possibilities of action and the social and ideological limitations of the educational system.

According to the [5], continuing education systems should be created for architects, because architectural education should never be considered as a completed process, but as a process that must continue throughout life and that should transform the professionals' architectural mindset, so the creation method is a part of a continuous and harmonious cultural process. To that end, one of the strategies is training in research techniques as an integral part of architectural education, both for students and professors. Research and publication should be considered as activities inherent to architectural educators and should cover applied methods and experiences in the professional exercise of architecture, in project practice, and in construction methods, as well as in theoretical disciplines.

According to the [5], architectural training involves the acquisition of the following abilities:

• Ability to be creative, innovate and ensure leadership in conception;

• Ability to gather information, trace problems, apply analysis and critical judgment, as well as formulate action strategies;

• Ability to think three-dimensionally in the search for a conception;

• Ability to reconcile divergent factors, integrate knowledge and use these skills in the creation of a project solution.

On the other hand, the training of reflective, creative, and cooperative architects-urban planners who understand the complexities of the contemporary world requires the following abilities:

• Ability to work in collaboration with other architects and members of interdisciplinary teams;

• Ability to act and communicate ideas through collaboration, by speaking, calculating, writing, drawing, modeling and evaluating;

• Ability to use manual, electronic, graphic, and modeling skills to explore, develop, define and communicate a project proposal;

• Understanding of evaluation systems, which use manual and/or electronic means for performance evaluations of built environments.

In addition to the skills and abilities cited in its document, the [5] suggests that in addition to the five years of study, architecture graduates should be required to complete at least two years (although three are recommended) of practical experience/training/internship, before registration/license/certification for practice as an architect professional. With some flexibility for equivalence purposes, it is acceptable that, of this total, one year of practice can be obtained before the completion of academic studies.

Education by research

According to the discussed above, the theory-practice articulation constitutes an essential issue in the training of reflective, creative, and cooperative architects-urban planners. According to [3], a possibility for the training of reflective professionals lies in the intensive curriculum focused on education by research.

The intensive curriculum represents a proposal for alternative organization of academic didactics (university or higher education) considering the profile of the citizen and modern professional, of whom reconstructive questioning competence is expected, and not the mere reproduction of knowledge and practice. It precisely incorporates the challenge of education by research.

According to [3], the difficulty in relating research with educational commitment is found at three levels: professor, student, and researcher.

First, even in the professor, research is a pilgrim thing, even if the pressure on the need to research grows, as postgraduate degree is required, not to mention that it is part of the obscure and pitying triad: teaching, research, and extension. Especially private entities and even those that operate only at night hire as professors' people who see themselves as assigned with the task of 'teaching,' and do nothing more, not only because they do not have time or motivation, but mainly because it is strange or unfeasible to them. However, also in public entities and even in federal universities, there is most professors who only teach, or just teach to copy [3].

Secondly, research, when it comes to students, is considered as unreasonable and even a mistake, serving both for the most varied and absurd allegations and for poor preparation in basic education, their disinterest, additionally worsened by their need to work during daytime, their incompatibility because the profession would not require research, the precariousness of the environment, devoid, for example, of library, data, curricular time, etc. Consequently, they are condemned to listen to copied classes, take notes, and do tests [3].

Thirdly, researchers also usually ignore their educational importance, because they see themselves as producers of knowledge, surrounded by methodological, theoretical, empirical, practical issues, finishing their tasks by completing the research report. They generally understand themselves as special professors, so special that they no longer want contact with students, and begin to form a kind of academic elite, often compensated by specific financial support, instigating national and international contacts, prestige, and occupation of spaces. They cannot think about being an educator [3].

From this perspective, it is essential to implement actions that support "education by research" strategies for both students and professors. This concern as to bringing Architecture & Urban Planning students and professionals closer to teaching and research is already beginning to be evidenced in some pedagogical projects in Brazil. In the curricular matrix of one of Brazil's leading Architecture &

Urban Planning programs - [25], there are two optional disciplines that show concern for teaching, research, and the training of reflective, creative, and cooperative professionals; and their social commitment. One of the disciplines, called Higher Education Teaching, aims to analyze, and reflect on: (a) Pedagogical theories: the act of teaching and learning; how to teach; how students learn; higher education, with emphasis on the Architecture & Urban Planning program; and the profile of the student; (b) Teaching Models, the competencies of the higher education professor. The social commitment of the educator; (c) Practice in higher education teaching in on-site and distance education. Practical classes with technical-pedagogical monitoring; (d) Moodle platform as instrument in distance education; (e) Reflective and transformative pedagogical practice in the training of Architecture & Urban Planning professionals and individuals committed to human development.

This discipline shows the concern of program managers/HEIs with the education by research in the training of architects-urban planners and especially with the training of reflective students who can become future reflective professors. As stated by [3], research cannot be removed from the act of educating and, in this sense, it is also necessary to understand how the act of developing research and the ethical issue relate to its main actors: Universities, professors, students and research funding bodies, as we are going to focus on the next topic.

The ethical issue in the development of research

About strategies that are being adopted to understand the importance of the ethical issue in the development of research in Brazil, we can observe the constitution of some commissions and codes of ethical conduct that initiated the discussion.

Created through Resolution 196/96 and with constitution designated by Resolution 246/97, the National Commission of Research Ethics [CONEP] is a commission of the National Health Council [CNS] whose main objective is to implement regulatory standards and guidelines for research involving human beings. It is important to point out that this commission, in addition to being consultative, deliberative, and normative, also has educational function, working together with a network of Research Ethics Committees [CEP] belonging to the institutions where the research is carried out.

As described on the [26], the CONEP must examine the ethical aspects of research involving human beings in special thematic areas, submitted by the CEP of the institutions, and is working mainly on the preparation of specific standards for these areas, among them, human genetics, human reproduction, new health devices, research on indigenous populations, research conducted from abroad, and those involving biosafety aspects. It is organizing a system for monitoring the research conducted in the country.

The institutional CEP must review all protocols of research involving human beings, and it has primary responsibility for decisions on the ethics of the research to be developed in the institution, to ensure and safeguard the integrity and rights of volunteers participating in these surveys. It will also have an advisory and educational role, fostering reflection on ethics in science, as well as the attribution of receiving complaints and requesting their investigation [26].

It is important to note that both CONEP and CEP are formed based on a multidisciplinary view, with the participation of researchers, bioethics scholars, jurists, health sciences, social sciences, humanities, and exact sciences professionals, and civil society representatives. To systematization and registration of research involving human beings for CEP/CONEP, it was consolidated in 2012 a national and unified database of registrations called Plataforma Brazil that allows research to be monitored in its different stages – from submission to final approval by the CEP and CONEP. This concern with the issue of ethics in research is also a concern of the funding agencies in Brazil. In the case of the São Paulo State Research Support Foundation [27] the ethical issues in the development of scientific research promoted by it are presented on its website in the form of a Code of Best Scientific Practices.

In recent decades, it has been consolidated internationally the consensus that issues relating to the ethical integrity of scientific activities must be given – by the scientific community and institutions through which they are organized – continuous and systematic attention. The consensus that they should be self-regulated by this community was also consolidated. Thus, especially in the last ten years, in various parts of the world, institutional policies have been formulated, through regulations and codes of conduct, for dealing with these issues and institutional bodies have been created for their implementation [27].

In the Code of Best Scientific Practices submitted by the Scientific Board to the Council Board of FAPESP [27], it is observed that: in addition to the ethical precepts to which all people are submitted, regardless of the uniqueness of their professional activities, norms of conduct that derive from the specific purpose of their profession apply to scientists: the collective construction and appropriation of science. These norms define the ethical integrity of scientific activities and can be deduced from a fundamental principle: every scientist must exercise his profession in the most appropriate way, so it results in the best contribution to the advancement of science.

In FAPESP's Code of Conduct of Best Practices, a point of great importance for the approach of this article is about the responsibility of research universities/institutions.

According to [27] research institutions share with individual researchers the responsibility for preserving the ethical integrity of scientific research. They are the main responsible for promoting a culture of good scientific conduct among researchers and students associated with it, as well as for the prevention, investigation and punishment of scientific misconduct that occur within their scope.

Every research institution must have clearly formulated policies and procedures to deal with the issue of the ethical integrity of the research [27].

Every institution that is presented to FAPESP as the center of research activities should include, in its organization chart, one or more bodies specifically in charge of: (a) promoting the culture of ethical integrity in research, through regular programs for education, dissemination, advisory and training accessible to all researchers associated with it; (b) investigating and, where appropriate, punishing eventual scientific misconduct and repair the scientific damage they have caused [27].

Every scientific journal must provide for the regular use of scientific misconduct tracing procedures during the technical evaluation of scientific papers submitted to them for publication. This regular use will be considered by FAPESP as an important item in the evaluation of Publication Support requests submitted to it. Once the occurrence of scientific misconduct related to research supported by FAPESP has been traced, the journal editors must immediately inform the research institutions of the authors of the scientific work concerned and FAPESP [27].

When established the occurrence of scientific misconduct that may have affected the scientific value of a paper already published in a journal, it must clearly and expressly disclose the fact in its immediately next issue [27].

It becomes evident that research funding bodies in Brazil, mainly driven by federal and state support agencies for research, highlight the importance of sharing responsibility between researchers and institutions to ensure the ethical integrity in research. This understanding is also reinforced by [11], in the article titled: Regarding the ethical integrity of research, when he states research institutions have a responsibility to ensure ethics in research that is developed under their domain.

It is consensus that, at the institutional level, research institutions have the primary responsibility for ensuring that research conducted in them conforms to the standards of ethical integrity in research. Because it is the close environment where researchers conduct scientific activity, it has the most agile and effective means to promote research ethics values among its researchers, and to implement mechanisms for prevention, determination, investigation, and punishment of possible misconduct. Formalizing the responsibility of research universities/institutions is of paramount importance for understanding the ethical issue in Brazilian research, thus assisting professors and students in the development of ethical learning-teaching based on education by research.

4   CONCLUSIONS

As this article sought to demonstrate, training professors and students in Brazil through 'education by research' is of paramount importance for the development of a more socially responsible country. However, when addressing issues related to ethics in education and research in Brazil, especially as to the teaching of Architecture & Urban Planning, there is a gap between the existing and the ideal. We conclude that to stimulate the training of reflective, creative, and cooperative professionals, it is previously needed to contribute to the improvement of professor training. Without reflective, creative, and cooperative professors, how to train professionals with these skills?

Investing in professor training should not be understood by higher education institutions as a positive item only for evaluations of programs and higher education by the Ministry of Education. This research showed that understanding the professor as a crucial element for the training of reflective, creative,

and cooperative professionals is essential for the social and ethical development of Brazil. Stimulating continuous training, research, and, above all, valuing the teacher is one of the ways to succeed in the training of architects-urban planners with social and ethical commitment. Universalizing knowledge is directly interconnected in the relation between research and teaching. Research cannot be dissociated from education. By dissociating from research, universities waste the chance to represent a center for human development and remain as an instrument for reconstruction of innovative knowledge, ethics, and reflection. Analyzing and reflecting on current pedagogical theories, teaching models, evidencing the social commitment of the educators and their commitment to human development is of uppermost importance for developing the teaching/learning of Architecture & Urban Planning in Brazil.

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