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RESEARCH ARTICLE

Reflections on architectural design education: The return of rationalism in the studio



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Abstract

The design studio environment has remained the same throughout the past century. As the Studio Culture Task Force of the American Institute of Architecture Students (AIAS) (Koch et al., 2006) noted, the ongoing changes in architecture education are not aligned with today's fast-changing world, especially in the context of architectural practice. The AIAS analyzed the design studio problem and expressed doubts on the effectiveness of current studio practices in providing adequate design-thinking education. The report indicates that studio culture values project appearance instead of the actual design process. In recent years, similar problems have been the topic of debates in Khartoum. Criticisms are mostly centered on the observation that students show no interest in the design process and tend to focus on form making. As a result, efforts to teach design methods and to restore the balance between creativity and rationality in the design process have failed. The reason is related to the difficulties associated with the implicit nature of conventional design methods. These difficulties, which are common in architecture schools, include the lack of a clearly defined design methodology and the misunderstood role of the systematic approach to design in the studio. Nevertheless, signs of change are gradually emerging, as demonstrated by the global call for change in the studio environment. This call for change indicates a general agreement on the need for the reorientation of architectural design education toward an engaging policy that considers the social responsibility of architects. This study proposes that the route for change is through the return of rationalism in the studio. Since the 1960s, many writers have recognized the importance of balancing rationality and creativity, which are mutually interdependent, in the design process. From this perspective, the research question is drawn: how can we bridge the gap between the rational and the creative design activities in the design process? A theory that conceptualizes the idea of knowledge interdependence does not exist. The available design theories, such as rational problem solving and reflective-in-action theory, deal with different aspects of design activity. Both theories fail to describe the integration of the rational

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and the creative aspects of the design process. Therefore, we propose the integration of the two theories into a new theory called the integrated design paradigm. The proposed theory serves as a theoretical base upon which the interdependence of the rational and the creative phases of the design process can be conceptualized. We aim to bridge the gap between the two design phases by considering research knowledge interdependency as a unifying activity. The first phase is a systematic method involving research, the use of positive theory, and the production of basic principles. The creative practice phase also involves research and focuses on understanding the rational knowledge developed in the systematic phase, including the basic principles and design strategy, as well as on the application of these concepts to the design problem.

The Department of Architecture and Urban Planning at the Ethiopian Institute of Technology EiT of Mekelle University (MU) is currently developing a research program in which the development of and reflection on design methods is a key research area. Within this framework, the present study intends to be an introductory effort to guide future empirical research. The present study aims to describe the design process of architects, and introduces theoretical and technical frameworks. The integrated design paradigm as a system of inquiry within the spatial relationship strategy is framed.

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1. Introduction

The growing dissatisfaction with design failures in architectural design studios appears to be the main concern of researchers and academicians around the world ([Salama, 1995](#)). In a time when the world is becoming complex, the field of architecture faces the challenges of climate change, globalization, urbanization, and social transformation in an unprecedented scale. The design studio environment has remained the same throughout the past century. As the Studio Culture Task Force of the American Institute of Architecture Students (AIAS) ([Koch et al., 2006](#)) noted, the changes in architecture education are not aligned with today's fast-changing world, especially in the context of architectural practice.

The AIAS analyzed the design studio problem and put forward a report that is focused on the design thinking process, which they consider as the most critical aspect of design studio education. The AIAS report casts doubts on the effectiveness of current studio practices in providing adequate design-thinking education. The following questions express these doubts: To what extent do our current studio practices and projects promote process learning as a main objective? Which should be emphasized, the design process or the final product? The report indicates that studios value project appearance instead of the actual design process: "...the current studio culture rewards students with the best looking projects" ([Koch et al., 2006](#)).

In recent years, similar problems have become the topic of debates in Khartoum, the city where the author of the present work engaged in design studio teaching for many years. Most criticisms have been directed at the teaching policy, which is often focused on presentation drawings instead of the design process. One of the most commonly cited problems in teaching architectural design is the focus of studio assessment on the end product rather than the process.

Rationalism has been the norm in design studios since the beginning of architecture education in Khartoum 60 years

ago. However, design methodology has become implicit, which may be attributed to the tendency of students to focus on design appearance rather than the process. Many difficulties associated with the conventional design methodology in most architecture schools in Khartoum are related to such implicit nature. These difficulties include the lack of a clearly defined design methodology and the misunderstood role of the systematic approach to design in the studio.

The inadequacy of the implicit design methodology has caused students to lose interest in the design process and to jump to form making while relying only on intuition and artistic skills. According to [McAllister \(2010\)](#), the real danger is the fact that students pay too much attention to the end product that they ignore the development of essential design process skills.

As a result of these trends, several negative outcomes have been observed, including the tendency to adopt the architecture-as-art approach, the focus on form-making as the primary design goal, the reliance on intuition and artistic skills, the disregard for the process and the lack of focus on rational problem solving, the focus on self-satisfaction, and the lack of social consideration.

The disinterest in the design process combined with the tendency to focus on form making hinders the restoration of the rational basis of design in the studio. However, the present study recognizes the inevitable change toward rationalism that is already occurring in practice. As [Friedman \(2003\)](#) noted, the design process "...is necessarily in transition from art and craft to form of technical and social science focused on how to do things to accomplish goals".

The following section reviews the literature to understand how studio environments around the world reach the situation in which the rational design process is replaced with intuition and artistic skill. The implications of these trends on the education of future architects are also examined. We then discuss the relationship between the intuitive approach, the concept of architecture-as-art, and

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