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INDIVIDUALITY VERSUS COOPERATION: AN APPROACH IN DESIGN STUDIO

Abstract

Design education is one of the topics that is widely discussed in schools of architecture. Architectural theorists and architects developed various ideas for design education. Some believe in experimental design, some in the integration of theory into design. Importance of other disciplines in relation to design is also a concern for some. An architect who is able to question the problems of his/her time/city/society and who is able to create innovative solutions is, subsequently the goal for the architectural education. Today reevaluation of design education in terms of its content and process is essential in architectural education . In the light of these, concerns related to design education can be outlined as ;

-Integration of other disciplines to design studio
-Integration of design studio to real life and its problems
-Teaching methods to explore imagination and creativity
-Creating motivation for experimentation in design

This paper is about a design approach to be carried out in a design studio for the students of architecture as their first architectural design study. The objective of this design course is to provide students with the tools to solve a design problem using their creativity and knowledge in response to a specific context. Design approach proposed in this studio highlights the following points in design in relation to the above mentioned concerns.

-Abstraction for concept development
-Interactive design
-Integration of school work with real life
-Cooperative learning

This approach was carried out for students of architecture in 2006-2007 Fall semester at Bahcesehir University in Istanbul. The project theme concentrated on contemporary local and global architectural problems. In this context the project problem was formulated on an existing site in the city. The peculiarity of the site/context, formed the basis of the design problem. Neighboring sites were assigned to each student which made it possible for the students to work interactively.

Design process started with a workshop where students developed a project concept through abstraction where they designed artifacts to explain the concept of their projects. This study is followed by a cooperative learning phase where students worked in groups.In this phase students needed to tackle with the real problems of their site and their city in general. Design process continued with exploration of the problem in urban scale where students developed their scheme interactively. A different scale was used to mature up their concept, basically using large scale models. Evaluation of all these stages terminated the design process.

By the end of the semester, it has been observed that students developed awarenes about the real problems related to the city where they had been working.. They experienced coordination with the neighboring sites in terms of ‘figure-ground’ The workshop held at the beginning of the semester was helpful for the development of concept for their project. The design process which integrated cooperative learning with individual creativity proved to be successful.

Keywords:design education, abstraction, cooperative learning, creativity, interaction

Introduction

We can only talk about a formal architectural education since the time of Jean Nicholas Louis Durand, yet education of an architect has always been the concern of the profession in the past and today. Architecture in one level, an act of technology, in another an art, requires a different approach in education, compared to other disciplines. Education of an architect requires an extensive learning of the state of the art, its theory and practice and its integration to design studio. Design studio being the core of architectural education is where students explore their creativity. It is with creativity that they can make use of their knowledge innovatively. Education of the architect, especially the content and course of design studio goes in parallel with the architect's role changing with time.

Architectural Education

In Vitruvius' (1960) The Ten Books on Architecture, title of the first chapter is by no chance'The Education of the Architect'. Vitruvius describes the architect as the master of craft and theory. In his definition of an architect, his requirements of an architect are; skill in writing and being good in drafting and a good knowledge of geometry, optics, arithmetic, history, philosophy, medicine, law and astronomy. He explains in his treatise why and in which context knowledge of each of these disciplines are required for the education of the architect. A Renaissance architect and theorist, Alberti (1999) in The Four Books on Architecture requires an architect also to be an artist, sculptor. He notes that architecture requires a philosophical development, pinpointing the intellectual component of an architect besides being an artist. It was with Durand, a new approach to architecture and design started to develop in the 18th century. His teachings introduce a design method where plan is the dominator of form. Starting with Durand and continuing with Violette le Duc, rational design method dominated the architectural profession until 1920s (Hearn, 2003) According to the teachings of Violette le Duc,(1987) design starts with the functional program, developed and given by the client. Le Duc, suspecting lack of creativity in his rational design model, introduced the idea of machine, organism and crystal as metaphor to supplement for the creative component of architectural design.

By the first quarter of 20th century, Bauhaus under the supervision of Walter Gropius developed a teaching model for design where crafts played a vital role. In the first years of education, concentration on teaching of crafts were later complemented with theoretical work. With new administration and faculty, abstraction in art and architecture has become an integral component of Bauhaus' education. (Broadbent, 1995) During the first half of the 20th century, functional requirements dominated the building form and the design education concentrated on function that would yield the form.

Post modern period marks a shift in architecture and architectural education. Other disciplines especially of philosophy's involvement and integration to architecture has become an agenda. In Tschumi's words 'After more than half of a century of scientific pretence, of system-theories that defined it as the intersection of industrialization, sociology, politics and ecology, architecture wonders if it can exist without having to find its meaning or its justification in some purposeful exterior need' (Johnson,1994)

Design studio, being the core of architectural education is the concern of architects at education and practice. Today educators and designers agree on students' exposition to declarative and procedural knowledge in studio in order to design a project although scope of this knowledge might vary from one institution to the other. There is also concensus on the need for creativity in design studios. Consequently, following or similar other objectives

explain the aim of any architectural design studio in almost any school of architecture. The objective being; to develop students creativity and provide them with the technical and practical knowledge to produce innovative projects/ structures. In terms of content of an architectural education, the ratio of declarative and procedural knowledge to design varies and this provides the idiosyncracy of each institution. According to Goldschmidt (2007), ' A dichotomy between a quest for creativity and an aspiration to attain expertise appears to be inherent in today's architectural studio.' She thinks that innovation and creativity have become the primary expectation from the students of design studio today. This in a way creates a conflict with how much they learn to gain expertise. Knowledge provided for the studio would help students develop their projects according to the available technology and norms. But how can the creative component be integrated to the architectural studio? According to Goldschmidt (2007) creativity cannot be taught, it can only be supported, and identified through the method provided by the instructor. In that respect instructors in designing the studio brief consider how to carry out the design studio to identify the students' creativity, at the same time provide knowledge and point out the relation between knowledge integrated to the studio and the quality of the designed product, because students should be able to understand this relationship.

Development of Instructional Approach

In this paper, we want to discuss about the instructional behavior / approach that we practiced in the second level/ first architectural design studio during 2006-2007 academic year at Bahcesehir University/Istanbul. The objective of this design course was to provide students with tools to solve a design problem using their creativity and knowledge in response to a specific context. This studio which is the concern of this paper is significant because it is the first architectural studio in the curriculum and our program requires assignment of a private dwelling for this specific studio. Students in their first year of education had two design studios. Basic design and design studies where students learned the basic principles of architecture and developed small, numerous related projects. Three instructors two of which are the authors of this paper, instructed the course and fourty-five students attended the studio. The projects were completed in fourteen weeks.

We started by identifying our architectural concerns for the studio and set up a structure on how we were going to proceed step by step. Architectural concerns are straightforward and can be valid for any studio work.

-Integration of knowledge gained in the other courses to design studio: As pointed out by Goldschmidt (2007), educators, architects agree upon gaining expertise in the course of the design studio on fields related to the act of building. In that respect integration of knowledge on history and theory, construction and structures was one of our concerns in this studio.

-Integration of design studio to real life and its problems. Education can be more effective when students get meaning out of what they learn and if they can relate to real life situations what they learn in their courses. This is more valuable for higher education because students after completion of their professional education will be active in the practical life.

-Implementing methods to explore imagination and creativity.By the end of the modern period, rational design method or design as problem solving proved to be ineffective. The ongoing discussion on how to teach creativity and how to bring innovation to design studio led educators to write project briefs introducing different disciplines and their material to design studio. In that respect we believed that through our instructional behavior and our brief we may be able to support and identify students' creativity and we aimed to achieve that by our approach in the studio.

-Creating motivation for experimenting in design. Motivation, in any course especially in a design course is very important for the production of the final work. By assigning a contemporary ongoing issue in architecture i.e. 'questioning of the meaning of a house' as a project subject which is a design of a house and home office/workplace, we aimed to motivate them to reconsider and question the traditional meaning of house. We asked them to provide innovative solutions to such a global issue which needs to be explored at a local level. With this project subject we also wanted our students to think about another contemporary issue in housing; how a group of houses/ part of a neighborhood can be designed considering the idiosyncracies of users, without creating sameness?

We developed a program/schedule on how to proceed in the studio in terms of what kind of activities we expect from the students. An educator, D. Schön (1987) sees the design education as 'the model for education' in general. He argues that other professions like law, medicine and even business should take this method as a model for their education, believing that other professionals like architects have to deal with 'complexity, uncertainty, uniqueness and value-conflict' as well. His model 'reflection in action' provides on the spot research in the discipline. We wanted to carry Schön's (1987) ideas further and decide to make up other 'reflection in action' groups in the studio. Traditionally this dialoque is between an instructor and a student, we wanted to introduce student to student dialoque group. We wanted our students to develop questions on architectural issues of their epoch in the context of 'home and workplace', at the same time, draw their attention to the local problems of the site they were given.

While developing the design brief we wanted to work on the following points, considering the difficulties the students could face while designing a project.
- Create means for developing the concept of their projects
- Create teaching methods to increase their learning
- Increase and support their creativity
- Make their studio work meaningful and real

Design Process

Our experience suggest that beginning of the design course, specifically starting to design is the hardest part of a design studio. When studio instructors ask students to develop the main idea/theme/concept of the project , it is usually few students that would come up with something valid. Students tend to think about the functional requirements and start with the layout of the plan. Keeping that in mind, we decided to give them a three day workshop independant from the design topic that would utilize brainstorming, to develop an idea, a concept. Then we asked them to design a three dimensional construction reflecting that concept. Our limitation was only of the size, they were free to use any material and technique available. Believing that through 'reflection in action', we could dig out their creativity and skills to reflect their ideas on a construction. Through discussions we asked them to explain how their work reflected their concept. This would make them think about their concept and mature their work. It was a way of materializing their ideas which in return opened ways to new ideas. An abstract idea was materialized and made 'back-talk' (Goldschmidt,1983**)** for new ideas until the end of the workshop.

Design is a very individualistic act yet architecture as a profession is not. Keeping that in mind, we wanted to utilize the cooperative learning method where students work together to maximize their own and other's learning (Johnson, Johnson, Stanne, 2007).We wanted to make sure that positive interdependance was structured among the group, students became

aware that they were linked to each other and they would be successful if everyone was successful. By sharing their resources, helping and supporting each other they worked together, interacted with each other to reach to the final product. We formed groups for case studies, site analysis/contextual study and functional analysis. Each group collected the necessary information related to the topic, prepared them in a poster format to be posted in the studio and presented their work to the class. Each group could concentrate on a certain issue related to their studio project and shared it with the class. The termin for information gathering session was decreased through cooperative learning method and students had more time for developing their design.

The design critique is the basic, fundamental component of architectural studios today. Educators believe that knowledge can be assimilated when it is offered at the moment when the learner requires that information and studio system is based on that. (Goldschmidt 2007) During the studio critique, ideas are reflected through the discussions of the student and the instructor. This is also accompanied by the sketches developed by the two parties. Sketches as revealed by Goldschmidt (2003) 'back-talk'. Through sketches students get new inspirations that were not originally called for. This would lead them to concentrate on their thinking process, enabling them for new inspirations. This relationship between the instructor and the student which is typical for any studio has been manufactured between students as well in our studio. We provided them with a site plan of a neighborhood where each student was assigned a different site. Each student while working on the project had two to four neighboring sites/fellow students to interact with. Studio discussions with the instructor continue among students whose sites were located next to each other. Verbal communication accompanied by the'back-talk 'of models, drawings, sketches opened way for new aspirations for design. This created interactive studio sessions where students needed to check how the students at the neighboring sites were developing their projects. By the interaction we aimed to support and identify their creativity.

While we were preparing the brief, our agenda was addressing to real architectural problems in the society in order to motivate and prepare students as professionals, ready to cope with the problems associated with their profession. Project site assigned to the group, is an existing residential neighborhood in the downtown of the city which is in transformation. Low rise single/ row houses are transfering into workplaces in a fast pace without a change in density. We wanted to pinpoint an existing local problem and asked students to generate ideas in response to this case. A more global issue, redefinition of a house in the 21st century was the project theme. Our brief asked for a design of a single family house with workplace under this context. Basic architectural issues public and private realms were also discussed during the studio crits. We noted that dealing with local and global issues increased their motivation.

Evaluation and Conclusion

Evaluation of the studio work was pleasing because students success rate was highly satisfactory. We got feedback from the students that they felt motivated and enjoyed their studio work. Some students entered a local students' design competion with their projects and one of them was commended to be exhibited. Evaluation of our method at the end of the semester opened way for new ideas for the coming years. Designing the workshop more rigorously where students can spend more time on developing concepts or frame of mind for their projects and inviting students from other levels to participate to the workshop can create an atmosphere of interaction among students with different levels of knowledge. Integration of more sketching sessions to the studio develops students creativity and creates a medium for communication betweeen the instructor and the student. Realizing that students learned how

to cooperate with other parties and had an opportunity to analize how their fellow neighbors tackle with a similar issue while designing their projects, we want to highlight the interactive part of the studio more in the coming years.

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