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Concept-Interpretation-Product in Architectural Design Studios-Karadeniz Technical University 2nd Semester Sample

Ayca Araz Ustaomeroglu*a

*Karadeniz Technical University, Faculty of Architecture, Department of Architecture, Trabzon, 61080, Turkey

Abstract

Design studies are the environments where individuals receiving design education demonstrate their creativity in the most condensed way while questioning and communicating the theoretical knowledge they have learned through education. In this paper, studio education is discussed in the case of the Second Academic Year Design Studio at the Department of Architecture, Karadeniz Technical University, which is located in the north-east of Turkey in the coastal city of Trabzon. The aim of the study is both to introduce the Second Semester Design Studio and to investigate gains of students from the studio process in the context of the subject. The study also examines how students transfer their knowledge to the students who follow. The contribution of the studio process is also discussed.

Keywords: “design process, architectural project studios, design education, second academic year, the technique of semantic differentiation”

1. Introduction

Design studies are the environments where individuals receiving design education demonstrate their creativity in the most condensed way. As education is divided into two categories - theoretical bases and practical application - in architecture schools, it can be claimed that in studio environments, candidate architects are able to question, shape, discuss, describe and transfer their theoretical knowledge during education processes. In studio studies, students are

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E-mail address: aycaarus@gmail.com
directed to gather knowledge about the identified subject, analyse collected data, transform them into original designs, question while producing, designing and creating, self-criticise and critically discuss their ideas and therefore improve themselves. This paper introduces the Second Academic Year Design Studio at the Department of Architecture, Karadeniz Technical University located in the north-east of Turkey, in the coastal city of Trabzon. The aim of the study is both to introduce the Second Semester Design Studio and to investigate gains of students from the studio process in the context of the subject. The study also examines how students transfer their experience to the students who follow. The research was done in the 2009-2010 Spring Term. Two years later, a questionnaire was presented to the same class and a comparative evaluation was made. In the studio process, the questionnaire technique was applied after observation and the studio’s contribution to students and students’ gains were identified and discussed.

The study was completed in three stages.
1. In the first stage, the studio process was described with the help of student work.
2. In the second stage, the researcher waited for two years as students received more project education. As they became more experienced, they were asked to evaluate the second semester project processes. The evaluation employed the semantic differentiation technique and students were asked to participate in a questionnaire.
3. In the third stage, gains of students and their awareness were evaluated and discussed.

2. Architecture Education Approaches and Studios

Nowadays, as in the past, there are several approaches concerning architecture education. Among these, the Renaissance’s strong emphasis on geometry, Academia Royal’s clear cut separation of design in the workshop and theoretical education in classroom, Tomas Taveria’s architecture university models (Broadbent, 1995; Ozelgul, 2009) and the power of basic design education in Bauhaus (Ustaomeroglu Araz, 1998) are the first that come to mind.

It can be suggested that there are noteworthy turning points in architecture education and these can be classified under three categories. The first refers to a period when there were no architecture schools; therefore architecture education was done in guilds and construction zones. The second turning point is the period when architecture schools emerged though they were very different from today’s counterparts. The basic feature of this period is that only theoretical education was given in school; design experience was gained outside schools, mostly in architectural workshops. In the third period, practice was transferred to education institutions and the studio became institutionalised in architecture education. Among all these approaches, the only feature that has never changed in construction area/guild, schools or workshops is that the master-apprentice relationship is the basic education method (Ciravoglu, 2003).

The main aim in design studios should be to improve the questioning skills of students. Instead of the deliverance of solutions to students, students should seek answers to the questions “what is the problem” and “how to solve it” with the guidance of the educator. Therefore, it is important for students to identify and question problems and to access information to solve them. As a result, the studio environment enables communication between students, educators and other participants. This seems to be one of the correct approaches as it suggests production of ideas and design proposals and reaching solutions through discussing these proposals.

The design problem consists of content-subject, theme, place, context, method and process. Design depends on learning by practicing; although methods differentiate, it is a mental process. In this process, several tools are used such as literature review, visual materials, research reports, seminars, conferences, expeditions, traditional drawing methods and computer technologies. In addition, juries, individual critics, collective critics, participation, discussion and seeking solutions together are important factors in the solution process (Gokmen, Suer, 2003).

In this context, considering the functioning of the design studios of the Department of Architecture, KTU, architecture students are obliged to take an eight hour studio course in every semester. Passing the prior project is a prerequisite in order to take an upper level project. In selecting issues in studios, the theoretical courses that students have taken so far are considered and subjects that can be supported by theoretical knowledge are chosen (UstaomerogluAraz, 2008).

In the studio, each instructor works with his or her small group. However, at the beginning of the process, instructors and their assistants working in the same studio come together and identify the subject(s) to be studied. Particularly in the first semesters, the whole studio deals with the same subject whereas in upper grades there can be
a variety of topics for different groups. In some semesters, in order to establish coordination in the studio environment and to make students experience different points of views, internal juries can be formed with a few groups.

3. Aim of the Study

The aim of the study is to introduce the second semester design studio, to exemplify the design process with the example of a group and selected projects, to discuss approaches in accordance with evaluations and results and to measure students’ gains from the project process and their awareness. This study employed semantic differentiation scales and the questionnaire method after observation and determination in the studio process.

During the studio process, students’ capacities to approach, research, conceptualise and produce solutions were observed and at the same time the process was consulted. Then, students were left for two years to advance their education. When they became third grade students, they were asked to evaluate the second semester retrospectively. Semantic differentiation scales were prepared and questionnaire was applied to students. Thereby, it was possible to measure their gains from the studio process, their positive or negative attitudes towards the process and their awareness. Finally, obtained findings were evaluated and discussed.


As the whole class should study the same topic in the second semester, the topic that project executors agreed upon in a meeting at the beginning of academic year was studied in the studio. All lecturers (*) participated in the meeting and unanimously agreed on a particular topic. The topic, “To Touch an Architect” was studied a few years ago; as it was considered successful, it was agreed that this topic would be studied with different student groups this time. The topic was renamed “To Touch an Architect-2”. Students were asked to get to know about an architect, to understand his or her design philosophy and to examine a single work of the architect (in line with the second semester’s curriculum, this was limited to a single house of the aforementioned architect). In doing so, it was intended that students would make deductions from this work and then create a new house. In student meetings, architects who had left a mark on the history of architecture and today’s architecture with several houses, worked in different styles and lived at different periods, were selected at random. The list of architects was given to students.

This list included Walter Gropius, Mies Van Der Rohe, Le Corbusier, Frank Lloyd Wright, Alvar Aalto, Tadao Ando, Richard Meier, Peter Eisenman, Mario Botta, UN Studio, Rem Koolhaas, Zaha Hadid, MVRDV, Herzog & de Meuron, Foster & Partners, Rex, Atelier Bow-Wow, Sedat Hakkı Eldem, Turgut Cansever, Adolf Loos, and Alberto Campo Baeza. The aim was to lead students to examine all these architects and their works before they decided on the architect and his or her house as a reference work. Thus, fresh students would get to know many architects and building styles so that they were able to select the architect and his or her house as a reference. All the students in the studio were asked to research all architects on the list and their houses within the first four weeks of the process, to choose an architect and his or her house and describe it with a poster. Next, each group executed its own study.

4.1 Study of the Design Group

4.1.1 Method

First, the students examined the architects and their house structures. Then they decided on the preferred architectural style and reduced all the options into a single structure of one architect. Next, they were asked to deduct a main theme from this structure and to express it in one sentence. They transformed this theme into a project. Accordingly, the method was the following (Fig 1):
4.1.2. Process

In the beginning of the process, when the group’s study approach was determined, the following stages were experienced:

1. In the first stage, students were asked to make clear deductions on the house they selected and to turn it into a concept. The concept would be interpreted; it would turn into a main theme, which would turn into a new design (product).
2. In the second stage, they were asked to create a household family for the newly designed house and produce a scenario for the family.
3. In the third stage, they were expected to imagine and construct the landscape which coincided with the family’s desires and inferences that were obtained from the reference house’s environmental data.
4. The fourth stage was the design stage.

The group adopted the deductive approach. The students needed to examine meticulously the reference architect and his or her house, to find a starting point and then transform this into designing options. In this stage, they benefited from the work done within the first four weeks. However, as there was an apparent customer and as they have a designed land, in the next process they examined deductions more clearly in accordance with determined customer desires and land options. Accordingly, for their imaginary customers, they would find starting points on their designed land and produce suggestions in this direction.

In the studio environment, criticisms were made in a participatory manner. The aim was the expression of all the group students’ opinions on the suggestions of the student who was being criticised. Thus, an environment was formed in which students could freely express their ideas, and discover their own mistakes as they all talked about each other’s designs, discussed them and made self-criticisms.

The blocks, which were criticised and designed in accordance with customers’ desires and land data, were developed as form suggestions and students were asked to produce them in the context of the block, space and surface. Suggestions were thoroughly criticised and the presentation stage was initiated.

4.1.3 Presentation

With regard to the principal decision made in the meeting held at the beginning of the semester with the participation of all group managers, it was decided that second semester students were not allowed to use computers in their presentations; instead they were asked to apply classical methods to express and transmit their ideas. In this context, group students were told that they could use computers only on introductory sheets if they wished. Other sheets consisting of plans, sections, facade and perspective drawings were prepared through manual drawing, collage and colouring techniques. Several good works were observed among the projects. This paper includes two of these designs.

Project 1-Design: EdaKose-Reference Architect: Mies Van Der Rohe-Reference House: Farnsworth House
Research and deductions on the reference house by the designer:
The house was completed in 1951. It is one of the significant examples of modern architecture. The house has a glass prism shape. It was constructed by Mies Van Der Rohe for Dr. Edith Farnsworth as a weekend cottage to the
south-west of Chicago. The Mies designed rectangular prism shaped glass structure is located near the Fox River. The excessive amount of greeneries benefits from the peaceful nature of the environment. The house, with its wide and pillar-free internal space, is considered as a specific example (Figure 2).

The designer wanted to preserve the prism shaped glass form in her own form. However, the imaginary customer's family fancied mobile forms and considered privacy important. In this case, the designer took the customer's wishes into account and tried to use two interpenetrating prisms while she decided on the design. The inner prism would be entwined by a denser prism so that the latter could be cut and moved in different directions and consequently the desired mobility would be achieved. Thus, condensed surfaces would maintain privacy whereas slipping surfaces would provide mobility and the main theme of protection of pure geometry would be kept (Figure 3).

In space organisation, the loft analysis approach was preferred. Partition walls were only used for bathroom and toilet spaces; the other spaces were divided and shaped through furniture (Figure 4)

The existing river and close location of Farnsworth House to the river gave ideas to the designer considering the water element with the house. The designer designed upholstery of the house as complete glass and inserted a pool under one and a half floors. The users could enter the pool from the veranda and swim in the roofed pool, which would extend to the underground of the house. In addition, platforms, terraces, and disconnections from the floor of Farnsworth House were reinterpreted and used in the new design.

Project 2-Design: Fatma Karabulut-Reference Architect: Tadao Ando-Reference House: 4X4
Research and deductions on the reference house by the designer:
Tadao Ando’s 4x4 house was constructed on very limited ground of 5x5 measurements and its ground area is 4x4. As the ground area is very limited, in order to meet the user’s criteria, the building was formed with a basement
floor, ground floor and three more floors above these. Each floor of the building contains separate activities. The basement is formed for storage. The ground floor is used for the entrance, the first floor is for the bedroom, thesecond floor is for the study and the third floor is used for the kitchen and dining room. Although three sides of the building are closed, the fourth one has a breath-taking sea view (Figure 5).

As the student fancied primary geometric forms, she wanted to use cubic and rectangular prism shaped forms in her new design. She used these forms as a starting point and tried new variations with cubic and rectangular prisms. As the ground area of the reference house is very limited and distribution of all functions to different floors is regarded as impractical, the designer thought to use the same cubes and rectangular shapes horizontally and therefore create a larger ground area on the ground floor. Although there is no limitation to the ground area of the newly designed building, there is a serious elevation difference, almost two floors high. According to the prepared scenario, the users absolutely desired green and water elements in their house as they are very fond of nature. The designer took all these into consideration and formed the ground floor as rectangular prism and used the two other cubes to form downward floors according to the landscape (Figure 6).

As the starting point of the project was to use square and rectangular prisms, the designer used a rectangular prism horizontally and thought to shape the ground floor within this prism and dedicated it to functions like entrance, toilet, living room and kitchen. She formed the roof and side surfaces of the upper floor with glass as an enclosed pool. The pool both met the user’s criteria and enabled the designer to include and shape the interpretation of the pool with the sea view, which was fancied by the designer during environment analysis. The first of the two square prisms, to which the rectangular prism was attached, was placed at a 45 degree angle to the rectangular prism. The other square prism was located at the same angle and analysed through various functions (Figure 7).
The designer designed a winter garden with the first cube and made galleries and gardens to be perceived from the floors. In addition, the stairs operating within the winter garden enabled the garden to be perceived from all the floors and responded to the customer’s needs concerning the use of greenery. She shaped bedrooms as two separate floors in the second cube (Figure 8). As a result, the new design did not change geometric forms of the reference house but only modified some aspects. The design provided a spatial variety with water and green elements in line with the customer’s demands. In organising the space, the elevation difference in the designed landscape lead to the decision about entering the building from the upper level and distributing functions to lower floors.

5. Evaluation

This process, which was found to be successful, was aimed to be evaluated by students. As the study also aims to identify students’ gains in this process, it was found useful to wait until students gained more experience. Therefore, the questionnaire was delivered two years later. When students reached the third grade, they were asked to evaluate this project and the following results were acquired. Students completed the questionnaire form below and the arithmetic mean was calculated (Fig8). The questionnaire and the arithmetic mean are given below. Please remember the project “Touching an Architect” that you did in the first grade, second semester and fill in the following questionnaire concerning this project process;
The process was very beneficial to get to know many architects and houses.

It was not beneficial

Project input (examination of many architects and houses) was not difficult.

It was difficult

After examining many houses, we were asked to choose a single house. I decided easily

I found it difficult to decide

The process contributed to my creativity extensively.

I would have been more creative if there had been no limitation

I learned much about many architects after the process.

I learned nothing

I got a good grade

I got a bad grade

The process was fun

It was no fun at all

The Project duration was long enough

It was not enough

If I took such a subject now (3rd grade), I would be more successful

No, this topic was more suitable for second semester

Fig. 8. Arithmetic mean table according to data obtained from semantic differentiation scales

Research Findings
The questionnaire was applied to 25 students, who took the same project subject, by using a semantic differentiation scale. The following findings were obtained in accordance with the arithmetic means stemming from the semantic differentiation scale.

- Most of the students expressed that they got to know many architects through this research.
- Four students stated that they found some stages of the process difficult and other students said that the process was a bit hard. On the other hand, 17 students did not experience any difficulties.
• In terms of deduction of the option, students’ answers are close to the mean. One student expressed that he or she found the process extremely difficult whereas five students stated that the process was not difficult at all. The answers of other students are close to the mean.
• With regard to the contribution of the process to creativity, two students gave negative answers, one student was neutral but others expressed positive opinions at various levels.
• Among the students who completed the process, 13 stated that they all got very good grades. No student spoke of failure.
• Students generally agreed that the process was fun.
• Students did not find the duration of the project long enough. However, most of the students above average indicated duration was sufficient.
• Majority of the students (16) stated that they would be more successful with such a subject now (3rd grade

6. Results

Studio environments from the first semesters provide opportunities for students to do research, analyse, think, design, be creative and discuss their ideas with group managers and other group members. Thus, in addition to their individual skills, their capacities concerning group work, participation, discussion and creation of ideas also develop. Therefore, the students, who were initially reluctant to demonstrate and discuss their ideas, became freed from these attitudes and expressed their ideas more comfortably in time; they even began to defend their ideas to the end (UstaomerogluAraz, 2008). For this reason, in design studios, as Feigenberg (1991) and Yurekli’s (1995) mentioned, new minds should be formed. These minds should not only receive what is given to them; instead they should clearly present their own ideas. Student creativity should be supported. They should be encouraged to present their own styles and to defend their ideas. Attention should be paid to raising successful and self-confident generations.

The project was initiated with an idea that included formulation of a new design with an architect’s particular house and a concept derived from analyses. This project process had many inputs and it was very hard to complete. In the end, in the context of groups, all the projects received were found to be very successful. The cases given in this paper were randomly selected among these projects. The following results were obtained from this study:

Students can be very creative if they can work with a subject that is enthusiastic enough.

The first four weeks of the process, which included the research on architects and their houses, were completed as a group effort. It was observed that students benefited meticulously from opportunities provided by group work such as division of labour, coordination and share of knowledge through minor presentation. Students enthusiastically fulfilled their responsibilities.

In the designing process, students followed each other’s criticisms and worked in a participatory environment. This positively affected their design decisions.

It was observed that in designing, which stems from such analyses and associated implications, the deductive approach in the context of groups was very successful. Students began work as a whole body and brought many mass suggestions. This enabled them to master the subject. Similarly, in interior space organisations that they formed from the general to the specific, it was observed that they reached very successful solutions.

It was identified that students made very useful decisions concerning the reinterpreted use of deductions from environment analyses of existing projects both on interior spaces and around them.

Students were asked to evaluate this first grade project when they reached the third grade. As more conscious individuals about designing, they evaluated the process. It was identified that they were aware of the project’s contribution to themselves and their creativity. They also stated that the project was enjoyable, beneficial and fun.

(*) In addition to AycaArazUstaomeroglu (Dr.), these executors worked in the Project 2 studio and were involved in all principal decisions with regard to “Touching an Architect-2”: Ali Asasolgul (Prof. Dr.), Nilgun Kuloglu (Doc. Dr.), Nime Candas Kahya (Doc. Dr.), Cengiz Tavasan (Doc. Dr.), Derya Elma Sen (Doc. Dr.), Suleyman Ozgen (Yrd. Doc. Dr.), Demet Yilmaz (Yrd. Doc. Dr.), Murat Tutkun (Yrd. Doc. Dr.), Sengul Y. Erol (Yrd. Doc. Dr.), Umit Kulpaksi (Dr.) Fatih Sahin (Dr.) Kiyemet Sancar (Dr.), Fulya U. Demirkaya (Dr.).

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References


Dutton, Bergin& Garvey, New York, P.265-278.


