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ISSUES OF THE FIRST YEAR DESIGN EDUCATION IN ARCHITECTURE; EVALUATION OF STUDENT PROJECTS

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Introduction

First year education in architecture comes with different aspects of design education together with many problems as obstacles to design thinking. One of the major problems is the lack of student's background of creative and design thinking. Without any awareness or preparedness about these subjects and as a consequence of a rather questionable choosing method for architecture departments, concepts often fall into an environment of ambiguity. In this sense, developing a system of design thinking is a challenge. Primary structure for design thinking begins to be built in the first-year education, especially in the 'the introduction to architectural design*' course. This paper deals with the concepts and the methods used in design training in the first year.

The content of the 'introduction to architectural design course' can be summarized as the presentation of architecture culture, architectural presentation techniques, architectural analyses techniques, studies on the ability to see and think about the environment and explanations about the architectural design activities and the structure systems in general.

The aim stands as; the emphasizing the importance of the architectural presentation techniques, developing design-centered problem-solving ability and design skills, critical thinking skills and rising the awareness of cultural distinctions.

YTU Architectural Faculty, Department of Architecture. (15 weeks- 6 hours/week), 2005-2006

The goals to be reached in order to success these aims can be listed as;

- to make the students gain the ability of documenting, analyzing and interpreting the cases, to have the knowledge and ability to use-present architectural elements and compositions in creative problem-solving studies,
- to realize an approach to teach the 'design phenomenon via studying on various different problems in different levels in the first semester.

These problems are explained in detail with their definitions, aims, scopes, outcomes and evaluation techniques later in this paper. Having both abstract and architectural characteristics, these problems aim to develop the ability to communicate both verbal and visual, together with the ability to build models. These problems are in fact design exercises that study the main problems on form and space.

The reasons for the lecturers of this course to use these various amount of problems can be summarized as the attempts to widen the horizons of perception, to show the big picture about architecture and a general point of view about the architecture profession.

Materials and Methods

The lecturers have to teach a visual language, together with a design thinking process. In this context, objectives of the first year architectural design education appears as;

- design theory and concept formation;
- visualization in design;
- language in design;
- design cognition.

This list makes the background issue more of a problem than any other department of the higher education.

Structure Of The Course

The ‘introduction to architectural design’ course consists of;

A. Studies;

B. Problems and;

C. Presentation/Evaluation Techniques.

A. The **studies** in the course is grouped into three as;

1. studies both **abstract and concrete**, in 2-3D forms aiming to lead to the expressions of the existing forms and environments;
2. **abstract** studies in 2-3D forms aiming to lead to the expressions of the student’s ideas and solutions to design problems;
3. **concrete** studies both as 3D models and 2D sketches aiming to reveal the outcomes of the first two groups of studies.

As some students have more talent for sketches and expressing their ideas/knowledge in 2D forms, these studies aim to develop the entire group’s presentation techniques as well as modeling techniques.

All of these studies aim to consolidate the knowledge, which is later, turn to a feedback for the solutions to the given problems.

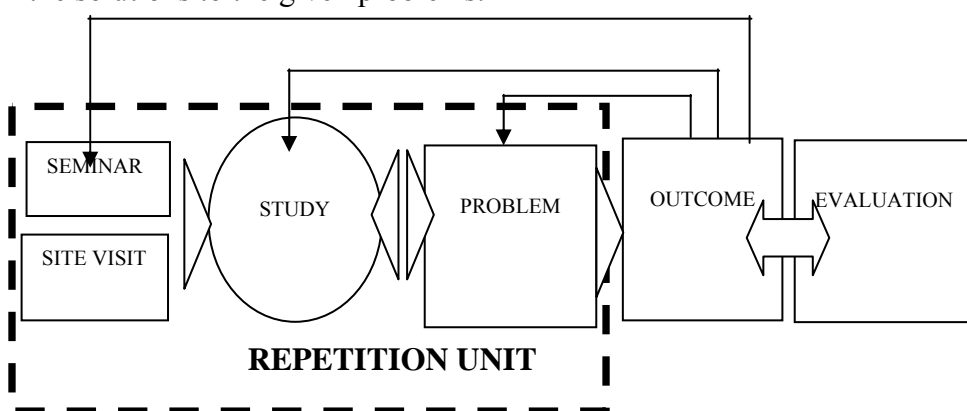


Figure 1. Repetition unit in the course outline

In site visits, students observe the environment, form on-site sketches, develop cognitive maps and sketches in studio. The seminars are given on;

Seminar 1: Introduction to architecture: concepts, architecture in different cultures, etc.- 1 week

Seminar 2: Architectural presentation techniques and thinking via sketches. -1 week

Seminar 3: Architectural design process. -1 week

Seminar 4: Introduction to building systems. -1 week

Seminar 5: Historical Sites. -1 week

Seminar 6: Presentations of students on national and international architects and their work. - 2-3 weeks

Presentations of students on national and international architects and their work.

These seminars are held by lecturers who have different profession areas from each other.

B. The general outline of the **problems** is;

In general, developing the ability of problem-solving is;

1. defining the problem (with its content and scope);
2. solving the problem (with analytical thinking, abstract thinking, analyses techniques);
3. presenting the outcome project (with an emphasize on the importance on 2-3 dimensional presentation techniques)

C. The general outline of the **presentation/evaluation** process is;

Developing the graphic language of architecture via presenting drawing techniques and building models and their equipments, forming sketches and drawings with pen, collage, lines, tones and shades, different kinds of perspectives and theoretical sketches. At the end of each activity/problem solving, is a discussion, 1 jury in the semester, 1 jury at the end of the semester.

The Framework Of The Studio:

The studio is built on; seminars, studies, problem solving, discussion and evaluation activities.

Site Visit/Seminar 1/Seminar 2/Study 1/Problem 1:

Observing The Environment – 1 week- on-site and in studio

Definition: Seminar on architecture; concepts, architecture in different cultures and a visit to Istanbul Historical Peninsula, Hagia Sophia.

Aim: Recognizing the environment and paying attention to urban and natural forms and landmarks in the environment.

Scope: Observing the environments

Materials and Methods: During the visit to Hagia Sophia, students sketch on-site. In the studio, students are asked to transfer their impressions via drawing a cognitive map. Question: 'Draw the way to Yildiz Architectural Faculty from Besiktas Port, for a friend of yours to come and find you.'

Outcomes/: Various sketches from Hagia Sophia and Istanbul Historical Peninsula.

Evaluation techniques: Discussing the environmental perception by means of proportional relationships, distances, images, reference spots and landmarks.

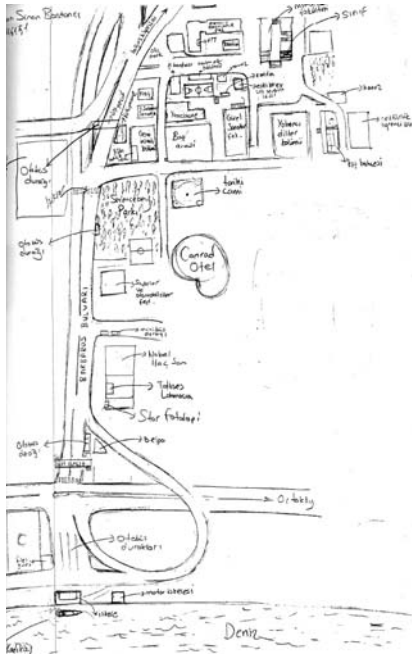


Figure 2. Perception of the close environment.

- attentive
- careful
- detailed
- balanced
- proportional

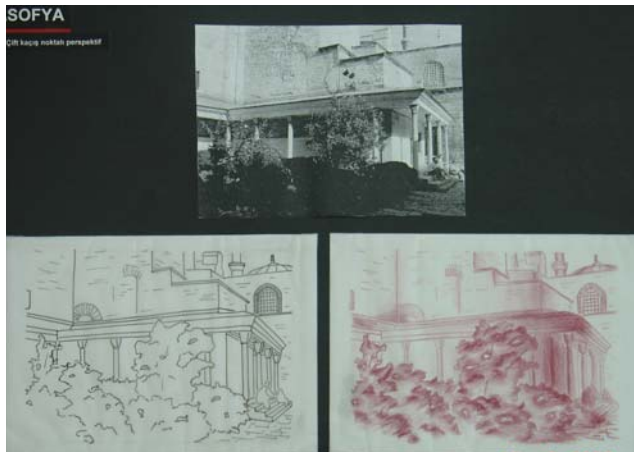


Figure 3. Expressing with different presentation techniques. (Hagia Sophia)

Site Visit/Seminar 2-3/Study 2: Impressions and Analyses of a Site - time: 2 weeks

Aim: Transition from single building scale to wider scales –sites. Consolidate Study 1, to rise the awareness of different urban scales, to develop the sensitivity of awareness.

Definition: After a seminar explaining architectural analyses, a visit to a site in Istanbul, students are asked to express their impressions and analyses about that site.

Scope: From observation to drawing

Materials and Methods: Drawing street siluets, analyzing buildings and its elements in that street/site and analyzing the texture.

Outcomes:

Figure 4. Sites in Istanbul



Evaluation techniques: Discussing the environmental properties, especially with an attention on historical sites. Building the awareness on materials, colors, textures, organizations, proportion, rhythm, etc.

Problem 2: Conceptual Expression Sketches –time: 3 hours

Aim: To gain the ability to think both abstract and concrete concepts in a composition and being able to express them.

Definition: Conceptual design study.

Materials and Methods: Given words and concepts like balance, symmetry, dynamism, danger, freedom, power, love, rock, water, woman, morning, etc., students are asked to pick 3 or 4 of those abstract and 2 concrete concepts and express them with a drawing, as oblique/indirect as possible.

Outcomes: 2D thought/idea sketches



Figure 5. Drawing expressing the words: water, space, book, window

Evaluation techniques: Discussions about the the speculation and idea behind the sketch, presentation techniques used to express the concepts, the oblique ways to express the concepts.

Seminar 4-5/Problem 3: The Cube – 2 weeks

Aim: getting prepared to design in a limited area. To be able to think about the relationships between different levels/elevations.

Definition: The cube problem is not a problem that a certain design school deals with, it has a universal character. The problem is designing different planes in different elevations and connecting these planes to each other on different levels in a creative and esthetical way in a cube of 10 x 10 x 10 meters. Also thinking of the statical details in order for the cube edges to be able to carry the design elements in it, is asked from the student.

Materials and Methods: 2-3D presentations

Outcomes: Sketches and models of the cubes

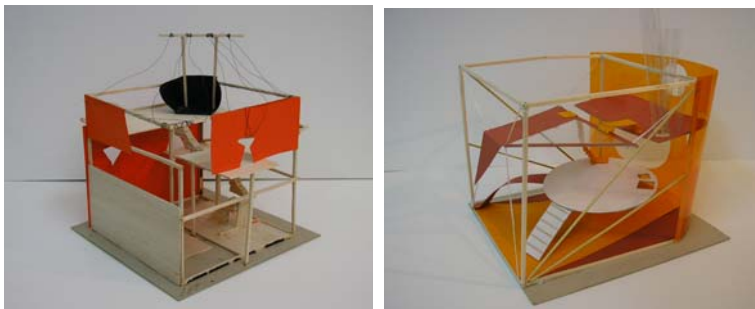


Figure 6. Cube models

Evaluation techniques: Discussions about the connections between the elements inside the cube, the surfaces and their shapes, textures, visual relations between each other, in and out of the cube, the space that planes define, the relationship between the additions/subtractions and the main form, the effect of emptied/solid/transparent surfaces of the lateral sides of the cube, the dramatic effect of colors.

Problem 4: Transforming Forms

Aim: Design thinking; obtaining new images (creative images) via using images; ways of changing the imaginary like; adding, separating parts, joining, shrinking and enlarging.

Definition: Transforming basic geometrical forms like cube, globe, cylinder, pyramid into new forms that can be used in architectural designs. Sketching of forms added or taken out of other forms. This subject is also supported by seminars 2, 3 and 4.

Scope: Basic geometric forms.

Materials and Methods: 2-3D techniques, especially sketch study.

Outcomes: 2-3 D presentations

Evaluation techniques: Discussions about the relationship and composition of forms, the ratio between subtracted and added parts, concepts of balance and harmony.

Problem 5: From abstract to solid: Italo Calvino-Invisible Cities -3 weeks

Aim: Gaining the ability of converting written forms of descriptions into visual expression forms. Starting the imaginative design process.

Definition: Reading 'Invisible Cities'. Studies on the ways to concretize the text composed of word.

Materials and Methods: 2-3D expressions

Outcomes: Sketches and models of cities defined in the book.

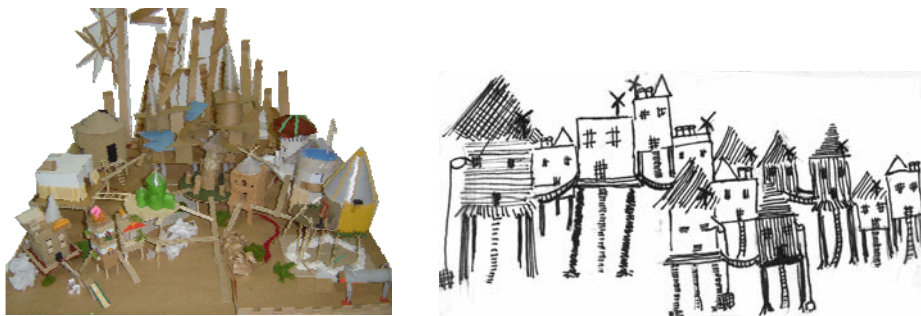


Figure 7. A model and a sketch of the city: Zenobia

Evaluation techniques: Discussions on different perceptions of the same text and imaginative ways to express the idea behind the text. There are two different approaches for this study; one is determining a certain city and building a model with the whole group, the other is having students pick up a city and build a smaller model of that city. While the first approach lets students discuss with each other and see the different perceptions of the same text, the other brings variation to the study.

In addition; Seminar 6, lasting 3 weeks, has the intention to bring a general outlook and provide a perspective through the knowledge of the world of architecture and the architects. It serves as a general introduction to the successful examples of architecture.

Problem 6: Designing in an Existing Environment

Aim: To introduce the student the architectural design, see the environment architecturally and define the areas in need of a new design or solution. To get to know and interpret the environment. The cultural, esthetical, functional, economical and social dimensions of the environment are taken into consideration when developing a new design and rising awareness about these subjects. Teaching the relationships between the interior and the exterior space; relationships between the architectural product and its urban and natural environment, explaining user needs, functional requirements, idea/concept-form relations in a design and the concept of 'space'. The needs and requirements of users other than the student himself are to be considered for the first time.

Definition: Site visit to a chosen district on Bosphorus and defining the areas/spots/buildings/squares or streets to work on. These areas are chosen from the districts on Bosphorus, which are easy to handle in scale. These districts also offer environments reflecting today and the past at the same time and having the property of being waterside environments. This study lets the student to design in a well-known district/environment and to see, analyze and interpret the existing structure, to produce data for new designs. Defining the problem is a process that consists of;

- site visit;
- site analyses (physical elements);
- social analyses (living patterns, cultural patterns, functions);
- listing of negative properties;
- preparing a scenario.

Scope: the villages of Bosphorus

Materials and Methods:

Design studies are grouped into groups as:

- developing a new design;
- appointing a new function to an existing building;
- intervening in the scale of visual/façade scale;
- forming a totally new design;
- concert platforms;
- cafes, restaurants, shopping units...etc. various groups of functions.

Outcomes: 2-3D design proposals.



Figure 8. Outcome projects

Evaluation techniques: Discussions at the end of each studio to develop the design are hold. A jury in-between the design process and a general jury at the end of the final proposals are set to evaluate the design process. The principle evaluation criteria of the outcomes can be listed as;

- interpretation of the environment;
- consideration of the cultural, esthetical, functional, economical and social dimensions of the environment;
- relationships between the interior and the exterior space;
- relationships between the architectural product and its urban and natural environment,

- consideration of user needs, functional requirements, idea/concept-form relations in a design and the concept of 'space'

Jury Process



Figure 9. Jury Day

Conclusion

In this paper, the design problem and probable solutions taken into consideration in 'the introduction to architectural design' course are given, along with the evaluation and discussion of the outcome projects.

All of the studies, seminars and problems to this level are meant to make the students to gain an architectural perspective and to deal with extraordinary subjects for a wider level of perception. The contextual needs are taken into consideration, an introduction to the language of architecture and the scope of architecture are put, the design elements in architecture are defined and studies to raise the awareness and perception levels are developed.

After these series of studies, there begins a process of dealing with the environment and its problematic areas. Working in an existing environment requires the student to build empathy with the environment.

Keywords: first-year design education, design thinking, architectural education.