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Criticizing architectural education through abstraction

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Abstract

As a result of the researches conducted so far, it is determined that the individuals who have received architectural education, gain a differentiation in perception, and therefore, the architectural education is somehow directive and distinctive. For this reason, in the paper, it is tried to analyze the differences of the perception and expression of abstraction by the effects of architectural education.

In the lights of learning and teaching relationship, the change and/or changes occurring through abstractions among the individuals who have newly started to receive the architectural education and who are about to complete the architectural education are put forward.

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1. Introduction

Man has been trying to rule nature since he existed in the world. In order to make the environment that he has lived in a more liveable place, he has defined, organized and tried to save it from chaos, he has made its presence existent and he himself has become existent in the process of doing so.

While trying to save his world from chaos, although man is not aware of it, his existence brings about an action that starts with his own existence. Perhaps the reason why this state of action has not been defined for many years is the fact that it has been nestling deeply and intrinsically within human beings.

And finally man defines the action that will differentiate himself from other living creatures: Abstraction...

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2. Abstract, abstraction

Abstract is the name of the living thing or being which is accepted via thinking (Anonym, 1988).

The act of abstraction is a mental process that relies on isolating the common element of a group of objects or defining the common relationship of more than one object (Anonym, 1989). Abstraction is the intellect designing something that is not distinct and independent in reality as separate and abstracting it from its own material (Agakay, 1974).

Abstraction is done in order to achieve abstract concepts that realize the most competent stage of the enlightenment process. It is not possible to obtain knowledge of the essence and reality of anything without first obtaining abstract concepts. Concrete phenomenon and events can only give a formal and outward reality; it is abstraction that gives essential information. In reality abstraction is a method, a tool that is used to approach the concrete again and perceive the concrete wholeness totally also in its parts, in its relations with each other (Hancerlioglu, 2005).

Human beings, since their existence, have realized the action of abstraction instinctively or fictionally for many purposes and with regard to these purposes abstraction has been expressed in many different ways.

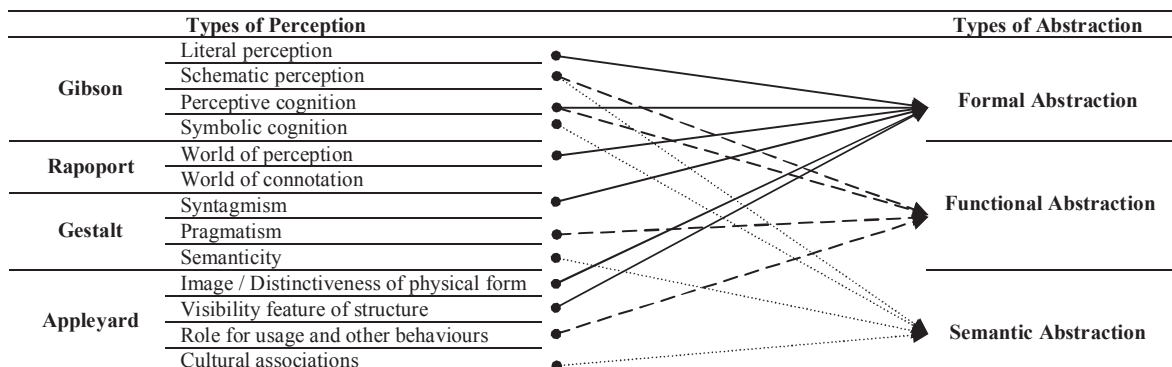
3. Perception, abstraction and architecture

In architecture abstraction exists in various stages of design process from beginning till the end and presents itself in the final product. Abstraction is used as a method in the environmental knowledge acquisition and developing opinion phases of designing process. The rough sketches and drafting, that transform concrete form into abstract and that unfold the whole notwithstanding their simplicity are also known as abstractions. The abstractions approach of the designer is classified by Uraz as “purifying from details, decreasing / reducing, differentiating / emphasizing and making comparisons” (Uraz, 1993).

Also the meanings that the architectural result product gained through abstraction were determined as “differentiating, isolating, correlativity, generality, simplicity, geometrization and reaching the essence” (Besgen, 1996). The common point in these distinctions is the desire and purpose of “reaching the reality; the essence” (Besgen, 1996; Yavuz, 2007).

The human being abstracts what he/she perceives and perceives what he/she abstracts, and can express the environment as much as his/her ability in environmental perception. For this reason the types of abstraction in architecture can be considered not from the point of result but with the types of environmental perception of human beings including the intellectual process. According to the perception theories of Gibson (1950, 1968), Rapoport (1977), Appleyard (1973, 1980) and Gestalt Theory, the types of abstraction are shown in Table 1 (Besgen Gencosmanoglu & Nezor, 2010).

Table 1. Relationship of perception and abstraction



3.1. Types of abstraction

It can be remarked that the results achieved and the theories of perception based on the works of Gibson, Rapoport, Gestalt and Appleyard, show three different types of abstraction those are formal, functional and semantic abstraction.

3.1.1. Formal abstraction

Formal abstraction is a type of abstraction that is generated by expressing the concrete forms with a simplified and abbreviated method. Expression of a concrete form by a pure expression language, reducing the form into its geometrical properties or expressing with the help of abstract structural lines and contours are all examples of formal abstraction. The pictures on the walls of a cave, alphabets of symbolic origin are the early examples of formal abstraction. The geometrical language of cubism and the universal nature of modernist primary geometrical forms can be named as formal abstractions.

Mainly the sketches, drawings and descriptions done in the preparation stage of design process can be considered as the examples of formal abstraction in architecture. In architectural education, the sketches, drawings and descriptions help to gain background information and systematic thinking (Inceoglu, 1995).

Formal abstraction is figurative, but it does not say anything directly about the object in the way a photograph can. It is selective. It expresses the perceived characteristic of the object, not the visible. Thus, it can be said that it is related to sensual responses.

Formal abstraction is a method that the designers use, before starting designing, in the period of environmental knowledge acquisition, in the period of developing ideas on formal search in is/her drawings. It expresses itself in the designs as purifying from details.

Briefly formal abstraction can be characterized as the universal expression mode of the perceiver related to his/her sensual and cognitive responses, stable background, the direct expression of the forms of the objects, figurative expressions that keeps the modal-formal expression as the primary, although it carries semantic characteristic inside, it depends on visible forms and has formal characteristic of the real object.

3.1.2. Functional abstraction

In architecture, function shows itself within the relationship between action and location (Aksoy, 1987). Whereas functional abstraction is the expressions that relate the human being's relations of action and environment both in and out of a place. Functional abstraction can be either pictorial representations or has a language that goes further to schematic display. Compared to other types of abstraction, it has more technical knowledge and more common modes of expression.

When considered in terms of architecture, the abstractions expressing environment, locations of usage and circulation space relations of the structure can be called functional abstraction. The environmental factor, circulation space and spatial fiction analyses, circulation schemes and function schemes are some examples of functional abstraction.

Functional abstraction consists mainly of the spatial analyses for the purpose of knowledge acquisition such as in the stage of designing, and the functional comparisons between environments in order to reach the solution more comfortably. It can be said that functional abstraction has a common language derived from the fact that they are more schematic when compared to other types of abstraction. Apart from schematic expressions, the pictorial expressions that emphasize the human actions are within this kind of abstraction.

By making a historical evaluation, Kuban remarked that different types of building were generated as a result of social work-sharing or functional organization (Aksoy, 1987). If the architectural product is considered based on this definition, the building types that generate as a result of functional organization can be evaluated as functional abstractions.

Briefly functional abstraction can be characterized as pragmatism indispensable expressions, reflecting the personal activities, the human behaviours and uses, the relations with spatial and environmental factors.

3.1.3. Semantic abstraction

Human perceives the visual world as pragmatic-semantic with the exception of physical-spatial (Erturk, 1984). In Gibson's spatial perception analysis, the pragmatic and semantic perception type is combined under a single topic.

Although the function which corresponds to the concept of pragmatism includes meaning, the types of abstraction can be considered in two separate topics as functional and semantic, because man perceives objects by their meanings apart from their forms and benefits. That is, he/she can abstract the meaning from form and function. For this reason the third abstraction type is known as semantic.

Meaning defines as an interface that includes all dimensions of relationship between user and the used, and that gives information about both parties. In addition to this, meaning carries a wholeness that reflects both the subjective values of the user and the physical characteristics of the object (Aydinli, 2005). From here it can be deduced that the meaning is unstable and that the semantic abstractions depend on the individual, life experiences, culture and knowledge. Thus it can be said that semantic abstraction is subjective, relates to the past and unstable. In other words, semantic abstraction is the individual’s periphrasis of the objects that characterizes them with the conglomeration that comes from the past. In these kinds of abstractions the use of expressions that the individual correlates to sui generis objects and that is revealed by the associations of the object and characterize it indirectly is in question. Semantic abstraction can be summarized as expressions that are generated via association, that defines the subjective, changing object related to the sensual and cognitive responses of the perceiver with expressions such as metaphor and symbols that include the cultural meaning.

3.2. *Drawings, abstractions and architectural education*

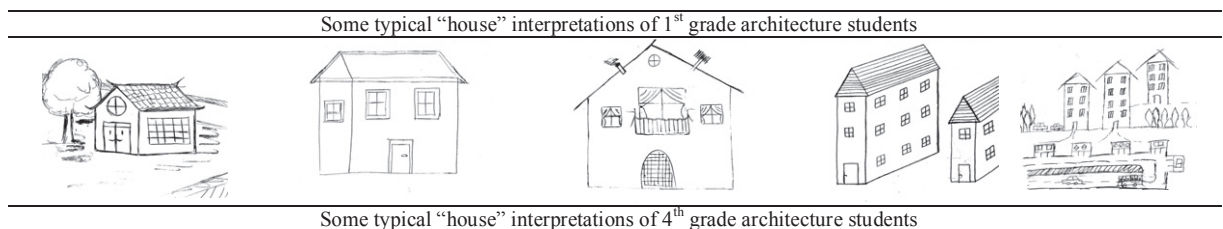
The purpose of this paper is to observe the change that architectural education caused in the thinking system of the people. From this point, an attempt was made to analyze the differences of the perception and expression of abstraction within the context of abstraction by considering the effects of architectural education on students who have just started it and those who are about to finish. The change and/or changes that occur during such action were also determined.

A group of 1st grade students who were at the preliminary stage of their architectural education and 4th grade students who had completed their education in Karadeniz Technical University, Department of Architecture were selected as test subjects in order to observe the change of abstraction with architectural education. In the pilot study applied to the test group, they were asked to express, by drawing and writing their ideas about “the house” which is a concept that is very closely related to the discipline of architecture and on which an individual, with or without having an architectural education can comment. During the study the students were not directed to make abstraction in any way whatsoever; they were asked to express the meaning of “the house” that first came to their minds on their working sheets independently and without being under the influence of anything. From their drawings it was aimed to determine to which type of abstraction that each group was inclined to and the changes in the thought and expression structure of the individuals during architectural education.

It can be said that the results of the studies of the 1st and 4th grade students show three different types of abstraction -formal, functional and semantic abstractions- parallel to the perception types of Gibson, Rapoport, Gestalt, Appleyard, moreover, the relationship between the perception and abstraction types, (See: Table 1).

Tables 2, 3 and 4 were prepared to present the similarities and differences in terms of perception and abstraction types of the study about “the house” that was conducted among 1st and 4th grade students of Karadeniz Technical University, Department of Architecture.

Table 2. Formal abstractions



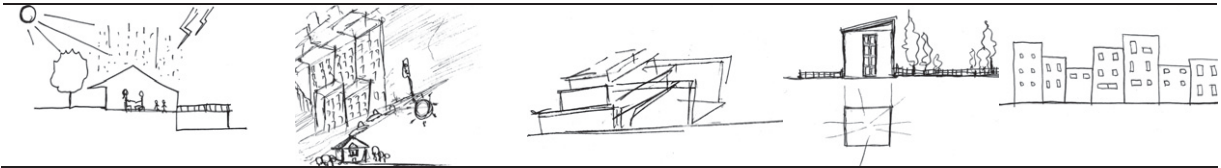
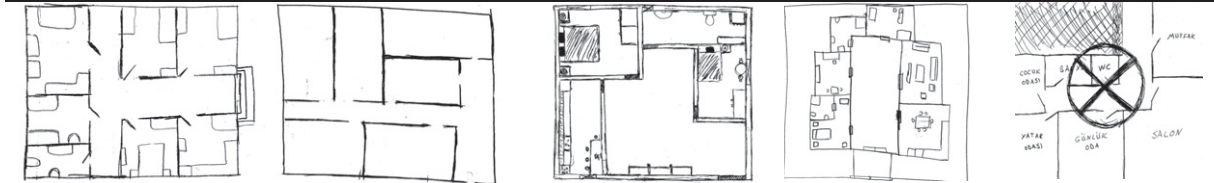


Table 3. Functional abstractions

Some typical “house” interpretations of 1st grade architecture students

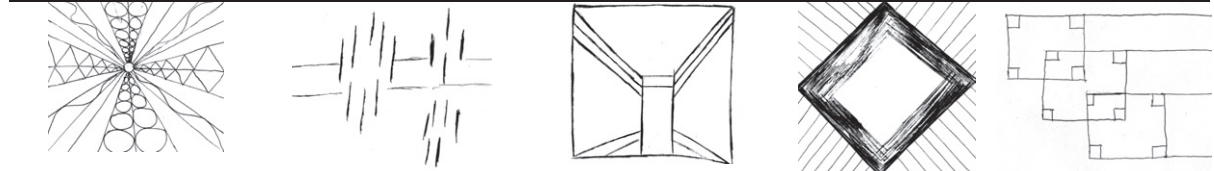


Some typical “house” interpretations of 4th grade architecture students

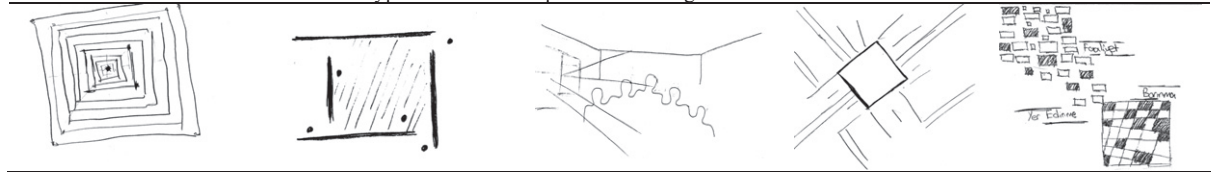


Table 4. Semantic abstractions

Some typical “house” interpretations of 1st grade architecture students



Some typical “house” interpretations of 4th grade architecture students



4. Conclusion

The results of the study that aim to examine the criticism of architectural education on individuals particularly on the basis of abstraction can be opened to discussion under two topics. The first of these is the evaluations to be done about “perception, abstraction and criticising the works of abstraction” whereas the second one is that of “criticising the architecture education and architecture”.

As a result of the study done with the 1st and 4th grade students of architecture, the percentage distribution of “the house” interpretations is shown in Table 5, in proportion to the number of questionnaires.

Table 5. Distribution of “the house” interpretations according to the types of abstraction

	Formal Abstractions	Functional Abstractions	Semantic Abstractions
1 st Grade Architecture Students	% 51	% 8	% 41
4 th Grade Architecture Students	% 38	%21	% 41

With the help of Tables 2, 3 and 4 it is seen that there are no intellectual and perception differences between the student studies particularly on the concept of “the house”. Whereas in the abstraction and expression step it is seen that the given concept -“house”- is expressed with too many lines and details by the 1st grade students, and with less lines and details by the 4th grade ones. From this point of view, it can be deduced that architectural education increases the ability of abstraction which is the articulation that is more distinct and that reaches the essence with the proceeding architectural education; that by architectural education, students gain a development of abstraction action.

Table 5 puts forward the change between architectural education and percentage of the abstraction as decrease in formal abstraction, an increase in functional abstraction and as no difference in semantic abstraction. However it is seen that the change in the abstraction types in architecture focuses on functional, semantic and finally formal abstraction respectively.

The fact, that the functional abstraction rate is 8% in 1st grade students and 21% in 4th grade ones, shows that received education is effective in featuring the functional characteristic of the concept that students are asked to interpret. This result gives rise to the thought that the increase and decrease in the percentage of abstraction approaches between 1st and 4th grade students are such as to rather which type of abstraction that is supported and affected by architectural education than the change in the types of abstraction.

It is concluded that as the study was held among the architecture students of Karadeniz Technical University, the derived result is the reflection of technical university education rather than to be attributed to the whole architectural education.

Nevertheless, in order for the architectural students to make original designs and to propose pragmatic solutions on structured or physical environment, it is regarded that abstraction should be learned and taught through education and performed consciously. With the consciousness to be given to the architectural students through their educations, it is considered that abstraction shall bring out essential, creative and original designs, which increase the creativity of the designer and also present various options for the users.

When architecture is defined as the art and science of constructing buildings and physical environment where people lead their lives, it can be accepted that the action of abstraction in architecture is affected by the changes in art and science. Architecture is also in the struggle for reaching the essence of reality and true knowledge, just like the art and science.

The basic purpose of education is to realize a systematic consciousness and make individual the subject of a working intellectuality by realizing the abstraction activity with such a consciousness. Thinking means abstraction, the ability to think means to build bridges between abstract and concrete (Timurcin, 2000).

When the ability of abstract thinking gained with architectural education is carried to the design, pragmatic and meaningful products, geometrical formations purified from details, catching the essence are seen in the product world of architecture.

The power of abstract designs justifies the interest for architectural designs known recently as abstract. When we look at the buildings of our time, the designs of the architects who have the understanding of abstraction and who are aware of the power of this understanding have the same power. The success of the architects in question supports how important the abstraction in design process is.

Hadid explains the design process as: “Something in which you learn your own way of doing and something very personal. First I study on the conditions and at the same time I think about how it can be explained. You determine how you can start by evaluating this condition in an abstract way and at the same time how your thought can be in here by observing the prevalent conditions. This is a lengthy process, it can take a few minutes or years” (URL 1, 2010).

While saying that he is trying to catch the vital union between the abstract geometrical form in the house designs and life and that his constructions that he characterizes as abstract gain life with the movement coming by the natural and human life, Ando explains this situation in his designs as: “Geometrical abstraction and the concreteness of man intertwine and thus the evident dilemma is solved around their incongruity. Architecture created at the time of this solution, is filled with a provocative and inspiring environment” (URL 2, 2010).

As all these show, it is a fact that the awareness of the abstraction shows its influence in each area of designing from product design to a structured environment. Thus, it is believed that the change to be experienced with the

abstraction that starts in architectural education finds its reflections in each scale belonging to architectural design and will continue to do so.

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