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Multisensory approach in architecture education

The basic courses of architecture in Iranian universities

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Abstract. *The privileged position of vision in architecture design is increasingly criticised, as well as the use of external representation methods, which degrade the reality of architecture in a mere visual, or an 'art of instant printed image'. However, the integration with architecture involves our entire body and all of the senses. Prior to the professional field, this can be traced back to the establishments, which educate the future architects. This article aims to study the origin of ocular centrism in architecture education, and its pathology in according to the pedagogic experiences. So then, it follows this question: how we can integrate the multisensory approach into basic courses that are defined in the freshman years (first three semesters) of architecture education in Iran?*

Keywords: *multisensory, architecture, education, basic courses*

The inhumanity of contemporary architecture and cities can be understood as the consequence of the negligence of the body and the senses (Pallasmaa, 2005, p.17). This deficiency can be perceived, not only in the omnipresent visual image of architecture of our time, but also in the domain of architecture education, as a starting point.

There are a number of architectural theories and studies, which have addressed multisensory in architecture, emphasised on perception process, which deals with integration between different sensory modalities.

The academic system in Iranian schools of architecture, after some revision, is affected like most other schools by the visual-based consequences of modern paradigms that has begun in West and theorised the education topics, in developing the skills as well as in the design process. The human bodily interaction with space has been considered even less in the courses syllabus and description, approved by Iran Ministry of Sciences.

This article studies the deficiencies of the actual approach in according to the pedagogic experiences in the first three semesters of architecture education. Overcoming a visual bias in education requires to internalise the environmental sensibility in the primarily years of education, when the student is preparing to learn the relationship of human and his environment so that the different senses place us as subject inside our environment, and our senses interact through our body. The lack of the multisensory approach or the 'imbalance in our sensory system' mostly leads to consider the body as a geometrical object containing numeric data taking up

space, in this model of architecture education that seems visual-based. We follow the question: what are the consequences of this approach in architecture education, and how can we plan the actual courses towards multisensory approaches?

Ocularcentrism in architecture education

Prevailing educational pedagogies and practices also regrettably continue to separate mental, intellectual and emotional capacities from the senses and the multifarious dimensions of human embodiment. Educational practices usually provide some degree of physical training for the body, but they do not acknowledge our fundamentally embodied and holistic essence (Pallasmaa, 2009, p.12).

Throughout history, architects and theoreticians have considered the human body in many different ways. After anthropomorphism, functionalism, modernism and ergonomics, an abstracting tendency has led to an objectivation of the body and consequently a focus on the eye as an important organ of perception.

In contemporary architecture, the ocularcentric approach can be seen also in the writings of the modernist architects like Le Corbusier, Walter Gropius that confirm the central role of vision in modernist thought. Levin in 'Modernity and Hegemony of Vision' has argued, beginning with the ancient Greeks, Western culture has been dominated by an ocularcentric paradigm, a vision-generated, vision-centered interpretation of knowledge, truth, and reality (Levin, 1993). This view can be followed to Renaissance, when the five senses were understood to form a hierarchical system from the highest sense of vision down to touch. On the other hand, 'the invention of perspectival representation made the eyes the center point of the perceptual world as well as the concept of the self' (Pallasmaa, 2005, p.16).

Brunelleschi's perspective is still considered as a fundamental basic course of architecture education. However, as Tom Porter says, 'Brunelleschi's perspective was a contradiction to the very nature of visual perception as it caused the viewer to freeze in time and space' (Tom porter, 1997, p.17). The perspective and projective drawing alter how we perceive our environment, and alter our world view.

According to Rob Imrie's finding (2003) that has studied how architects take the body into consideration in their daily practice (involving the education domain), there is a large influence of the Cartesian body-mind divide that consider the body as a dimensional form instead of a corporeal entity. Furthermore, in the actual model of education, the student is taught to fall back on his or her own body, based on a self-referential approach.

Therefore, educational philosophy has likewise understood architecture primarily in terms of vision, emphasising the construction of three-dimensional visual images in space. Whereas the education associated with construction, in traditional cultures is guided by the body in the same way that a bird shapes its nest by the movements of its body. Indigenous clay and mud architecture in various parts of the world seem to be born from the muscular and haptic senses more than the eye (Pallasmaa, 2005, p.26).

Pathology of visual-based architecture education

The tradition of architecture education in Iran, before the academic model, was based on master-apprentice method of training, transferred the skills through the

act of sensory perception and body mimesis. The design and construction process was experienced in real scale and *in situ* by the apprentice.

After the establishment of the first Iranian school of architecture in 1940, based on the Beaux-Arts model, directed by academicians who were educated in western countries, the academic program has been revised several times, particularly after the Cultural Revolution of 1980. However, the revised program was more a modified version of the pre-existing programs. Therefore, after passing about two decades of the last program¹, the impacts of the imported models from the West (beaux-arts, Bauhaus, etc.) have continued on the education approaches.

The principal aim of the four years of architecture education, as named 'architecture engineering', is the 'education of architects with general professional efficiency'. While the deficiency of artistic education in the years² before university progresses, the educational efficiency of freshman students decreases.

Therefore, the basic courses approved by Ministry of Sciences involve 10 courses³, which includes 29 credits. The axis of these three primarily semesters have been focused on several themes like 'improve imagination, boost creativity, presentation skills, spatial visualisation, confidence' (that seems general for the incoming years).

In fact, the courses syllabus is not the only factor which affects the educational quality in its approach to body or the monosensorial way. Furthermore, the lack of multisensory approach and its impact concerns, not only the basic period of education, but also can be extended in the next years of architecture education. So with a pathological view, we can distinguish and resume some aspects of this deficiency in according to the courses syllabus and pedagogic experiences in the primary education as the following:

1. Virtual or not lived experience of space

The most important difference of academic and traditional education is the experience that occurs in and out of the context. In fact, the academic design process, as Lefebvre says, occurs 'on a sheet of white paper'. The use of the visual media is not enough to sense and have a perception of space. It is the same as proposing a given terrain that does not exist, or is not accessible to observe by the student or 'bodiless observer'. According to Norberg-Schulz, 'environmental character' or essence of place is not been perceived. As the same way, analysing the architectural projects and existing monuments (as asked in the syllabus of 'Architectural basic-design studio2') on their photos, plans and other visual external representation tools, limits to geometrical and topological analysis of building as visual shape.

1. The last program has been approved by supreme council for planning of ministry of Sciences, and sent to all schools of Architecture as an obligatory program in 1998.

2. The majority of students accepted to study architecture in Iranian universities need the mathematics diploma.

3. Mathematics(2cr), Applied Geometry(3cr), Perspective Geometry(2cr), Materials and construction studio(3cr), Environmental perception and expression(3cr), Architectural expression-presentation 1&2(2+2cr), human, nature and architecture(2cr), Architectural basic-design studio1&2(5+5cr). Some other courses have the potentiality to classify in this list : Construction materials(2cr) and relevé of historic buildings(3cr)

We suggest also observation *in situ* and the experiences of case studies out of the studio, for the courses like 'Environmental perception and expression' that aims to interface the students with the reality of the environment.

2. Objectification of the body

Introduction of Cartesian body and static representation can be found in the books like the Architect's Data written by Neufert (1970) that is still a source of reference for students. Whereas it is true that the process of perception cannot be completed without the experience by the 'body in motion', some courses like 'Perspective Geometry' or axonometric promote the approach in that the body deals with in a dimensional form, instead of a corporal entity. For presenting and communicating the projects, the body is absent from representation or, static body reduced to its geometric dimension just to show the scale.

In basic design courses, we can concentrate on 'human bodily behaviour', instead of 'body numerical dimension' that has been used in course syllabus. The use of words like user/perceiver of space, instead of observer/viewer is the first important step.

3. Freezed in time and space

In visual-based education, we do not expect the students to think and express his/her design idea in terms of temporality and the environmental changes like seasons, day/night differences. The architectural artefact exists in a timeless space, an artificial condition separated from the reality of time. Furthermore, it is less important to consider how the spaces sound, smell, how the light fills the space, the temperature differences, how the walls, floors and ceilings reflect light and sound. Whereas perception is not a passive reception of external stimuli, it is as much an activity as conceiving a design. It is to be expected that in the primary education of the design process, as well as in developed design process, to take the dynamic environment and its interaction with the body into consideration. The courses like 'Architectural expression1&2' create the opportunity for students to consider and express the various aspects of temporality of space.

4. Visualisation of techniques in architecture design process

In the first semesters, the students learn how to express and represent their ideas through a range of representational artefacts to facilitate and mediate. The syllabus of the courses like Geometry1&2, Architectural expression1&2 in two consecutive semesters are focused on visual techniques and modeling like axonometric projections, perspective drawing, plans, sections, organisational diagrams, color rendering, photography, etc. Some drawings like axonometric or bird's-eye view give us the 'long shot' images instead of the real perception of scale. They 'disregard the dynamic relationship in terms of distance from the object, movement around it and our viewing inclination'. The dynamic and interactive digital model like video and walkthrough representation is an effort to 'immerse the viewer' again.

Meanwhile, the use of other interdisciplinary techniques like oral, writing, gesture, sound expression and other methods can help the students to communicate and support their design, representing the ambiance through the senses, behaviors and other factors.

5. Computer-based design process

The use of computer in the first two years of architecture education is often debated. The benefits of using the computer in architectural drawing cannot be denied. Whereas it is the truth that in basic courses, the design process is not still thought and internalised by the hand and mind of students. Without the mental internalisation, as Pallasmaa says, however the computerised design process turns into a purely retinal journey in which the student him/herself remains an outsider and observer (Pallasmaa, 2009, p.99).

The computer creates a distance between the maker and the object, whereas drawing by hand or building a model puts the designer in skin-contact with the object or space. Computer imaging tends to flatten our magnificent multisensory and synchronic capacity of imagination by turning the design process into a passive visual manipulation, a retinal survey (Ibid).

Maybe, both approaches are needed, but the student needs to understand for which aspects of the processes of thinking and design he/she should use them.

6. Sketch as mere visual drawing

As an important tool, sketch from the basic steps of education, is taken into consideration. Drawing by hand as a spatial and haptic exercise brings the designers into contact haptically with the object at the time of creating the representation. Unlike the photography, it should not be considered as a mere visual act to express the ambiances. In fact, the sketch is formed in a continuous process of perception and through all the senses. Therefore, sketching can be considered and employed as a multisensory act that can express the different senses, instead of a simple 'coordination between eye and hand'. The student can learn to be aware of the sketch differences between crowded and quite ambiance in terms of sound effects. Similarly, for exploration and drawing process in the courses like 'Relevé of historic buildings', we can have a multisensory approach, instead of a mere visual consideration that degrade 'architecture' to 'construction' in term of its physical aspects.

7. Direct encountering with architectural elements

In the first year of architecture education, the knowledge of students is not solid enough to encounter the spatial and constructive elements of space directly. Experiences show that having the direct approach to teach the building elements to freshmen, particularly in 'Architecture basic-design studios' causes visual-based results. This approach leads to objectification of design process.

However, with a phenomenological approach, we can introduce every architectural element, issued from phenomena. In fact, we can arrive at the objectivity through the subjectivity. For example, from the light phenomena or the verb of looking, hearing breathing, we can make a sense to the window, as an architecture element.

Toward a multisensory education

The proposed topics in the approved program of architecture education, in a critical review issued from educational experiences, are not enough to educate architects that should know the human body and conceive human spaces. Intellectually, we

may have rejected the Cartesian duality of body and mind, but the separation continues to rule in educational practices. On the other hand the visual use of media or use of visual media produces a visual bias in architecture. Although, the selected education methods by teachers are different and can direct the syllabus towards the involvement of body in the design process and skill education, it is expected that the multisensory education finds its place in the courses syllabus, as well as the social and human dimension.

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