Comprehending Vernacular Architecture in the Architectural Educational System in Iran

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Abstract Architectural studies in Iranian universities are based on models and educational system as well as a good understanding of vernacular architecture. Unfortunately, in spite of its strong and efficient practical background throughout Iran, vernacular architecture has not yet acquired its true position in academic architecture since its scientific and practical aspects have not been sufficiently studied. Correct understanding of vernacular architecture can familiarize students of architecture with the all important global problems, namely, introducing architectural solutions in the design and construction of buildings for the purpose of reducing environmental problems, as well as making clear the role of sustainability factors in presenting new ideas for building. In this article, the reason for, as well as methods, of architectural education based on vernacular architecture was investigated. For this purpose, by focusing special attention on vernacular architectural design as well as educational methods based on traditional and modern principles, the authors presented an educational model for vernacular architecture. Library studies were used to gather the necessary information. The research findings showed that architects and students alike need to acquire an understanding of vernacular architecture with regard to Islamic architecture and historical studies, various practical and workshop designs for spatial elements, performance of vernacular architecture in traditional structure and culture, and fundamental modernistic movement theories of vernacular architecture. The obtained results indicate that correct definitions and proper understanding of performance, description of relevant principles, and reconstruction of traditional architecture technology are essential elements in vernacular architectural education.

Keywords: *vernacular architecture, traditional architecture, modernistic architecture, patterns and models*

1. Introduction

Iranians ancient architecture always has been rich and productive potential that with using indigenous knowledge could create Consistent with the environmental and ecological life. Ancient builders have used limited sources for maximum Comfort and the climate has considered the main determinant of the traditional construction techniques. Despite this long history and Theoretical and practical efforts and according to Economic, political and cultural conditions, it seems Iranian society today are far from Sustainable Development indices. Sustainable development is beyond can provide a new worldview. The country is developing will facing Issue in the name of modernity. If we want to define vernacular architecture from aspects of tradition and modernity exist many Aspect that is common. Inattentiveness to Modernity and Tradition puts the interval among Contemporary culture and tradition. Iranian architecture is a cultural dichotomy, Willingness to repeat the tradition on the other hand looking to the future, and can't to provide a resolution or proper coordination between these two. The most important issue at this time is How to train vernacular architecture and modern architectural designs for the future. Many studies in new technologies and knowledge of vernacular architecture have been a method of education. All of these researches have changed emphasis on Nature of the curriculum, and the nature of vernacular architecture was overlooked. So the primary question is posed:

Does Understanding of the vernacular design teach in universities?

Does Architectural education in the universities in Iran for dealing with the design and construction of future influence?

Which of the modern architectural standards or local education oriented architecture can be useful and efficient?

2. Literature

Education and training system architecture design is considered in most of the training centers and universities in the world. Many research activities in the field of monitoring teaching and learning content and Educational content have been done about architectural education. In

these researchers, first of all, understanding design issue and Adequate understanding of components influencing is expressed. It is a gradual understanding of the design problem at a certain point it does not make, it is a multi-dimensional understanding of the design problem and is multi-faceted nature [1]. Compilation and preparation of plan for solving the quality of architectural education in the future and presentation models and new methods will have reviewed that, Current model of education and practice of architecture is not appropriate for the further. Lack of planning, a lack of dependency approach and negligence Values consider for the main reason for lack of attaining the right architecture for the future of the Iranians architectural school. A facial expression of the basic characteristics of sustainability, the two main components Identify: human being and environment. The environment is in attitudes the large comprehensive and comprises the scope and human decision-making. As a result man possesses different aspects of ecology - the physical, social - economic, cultural and political. To achieve to environmental sustainability, balance among Ecological sustainability, economic sustainability and social sustainability and culture. These three environmental organizations are listed three factors as the major [2].

Many schools of architecture added new courses based on the technical aspects of sustainability into the curriculum. For instance, some courses can be cited with titles intelligent design, energy and bioclimatic architecture *[3]*.

Architectural education issues identification and were introduced that involving large-scale learning problems in design workshops.

The two centered created aims to architecture, means man and environment, the need for understanding and Have sufficient knowledge.

Educational methodology has been proposed and investigated as a preliminary investigation [4].

Posada at Organ University have presented model of workshop communication and interaction environmental control system design workshops. Also explains, stability training imperatives utilize a series of practical training in non-traditional to join the apparently non-related issues. His proposed working model has a great deal of emphasis on the idea of using multiple scales

These models provide the "multiple scales" and help to the students Investigate a design problem and To solve the problem, according to The various scales of global, regional, wisdom regional, site, building elements.

Multiple scales method is really suited for classification in considering the relationship between them for classes of environmental control system and helps the students in the design workshops. "Multiple scales" is a very suitable method for data classification in environmental control systems while considering the relations between them and may help students in design workshops. The design process passes through different scales with a full understanding of the design process at every stage. This provides a suitable output as the input of the smaller scale. In this method, the design process does not neglect the elements, considering the totality governing the design plan. The move from micro to macro and from macro to micro is carried out in design workshops [5].

All studies were done in the education sector represents the architectural style of architectural education towards the future. Despite technology improves, Lack of attention to environmental crises affect Massive and dangerous for the environment. To develop models Provide new methods of teaching to future advances Synchronous with the goals of sustainability in design and construction will have considered Architectural education, architecture, design practices, utilize new technologies for sustainable development. In 1987 United Nations Issued Sustainability in the context of sustainable development in our common future [6].

The integrity of the sustainability issue by many researchers has been studied in Design schools that Most of them have reached two possible results:

Many schools have not guided the stability issue in the proper direction and have not perused with the proper approach.

Sustainable design requires totally different training methods versus previous teaching methods [3].

Architectural education in Iran expressed for Sustainability Education in two levels: At the macro level, Education system have perused to definition sub-multiple systems Based on the global and local needs that Each sub-system consists of a set of theoretical and practical, and in micro level utilize Iran Vernacular Architecture Knowledge, Presentation and implementing various models of sustainability education Emphasis on interdisciplinary courses and Related Topics Sustainability are the main constituent elements [7].

3. Comprehending Vernacular Architecture

Vernacular architecture in the past has been included housing and spaces belonging to the people. These buildings were made by the owner and building Contractors traditionally with related environmental implications and available resources and using vernacular knowledge. All Types of vernacular architecture have made with matching values Economy, culture and ways of life that they were creating [8,9]. In many historic towns and villages of Iran, vernacular buildings were always built that provide the comfort to human and environmental needs. One of the affirmation factors in shaping the architecture of these areas has been conformity of construction sets and single buildings with climatic and environmental features of their context. Vernacular architecture was considered identity before the advent of technology and new building materials in all parts of the country and in any form and in any kind of architecture. Vernacular architecture is based on knowledge and experience in traditional techniques. This architecture is self-constituted. Features of vernacular architecture can be learned easily. These features are derived from vernacular functions so for this reason that they are suitable for Local climate, flora and fauna and lifestyles.

According to the Rappaport's writings, vernacular Traditions demonstrate directly or unconsciously in the physical form of culture, needs, values, dreams, wishes and Feelings of each person [10].

The meaning of the principles of traditional Iranian architecture is axioms and values that had base on Iranian Heavenly and spiritual beliefs, and it is based on Islamic

worldview. It was in the context of a culture which historically has been proven principles and appears Suitable with time and place [11].

Three basic features of Traditional architecture are:

Traditional architecture is the product of the traditional way in Design and construction

Traditional architecture comes from a society that had a pattern and Continuity over time.

3.1. Traditional Architecture is Valuable and Meaningful

The use of Islamic architectural features and principles caused exquisite and profound buildings and spaces in the Iranian architecture relying on cultural, economic, and climate potentials over the centuries. According to late Professor Pirnia, Iranian architecture features include people-orientation, introversion and stability. In addition, this ecological architecture avoids idleness [12]. According to Vargas the emphasis on vernacular and traditional knowledge is an important cause in the stability of the cultural heritage and Guaranteeing the continuity of national identity in a society.

In any case, the tendency of traditional architecture has been more decorative than functional content [13].

These functions are not in new buildings. In vernacular architecture, all the principles of sustainable architecture which makes a healthy environment will have caused. We must accept the fact; vernacular buildings do not exist over the time to reflect the historical record, Cultural and environmental.

3.2. Education of Tradition or Modernity to Vernacular Architects

The theory, training and experience are used to discuss the importance of vernacular architecture studies at present and during the 21st Century. However, they are not just studies on the past traditions, but are a combination of approaches, solutions and successes for the future environment. These concepts are influenced by the concepts expressed in religious expression with natural patterns. In combination with light shade, grass and clay constitute the vernacular properties of exquisite beauties in Iranian art and architecture [14]. According to Islamic scholars, art is making and dealing with things according to their potential beautiful nature [15]. Traditional architectural education in Iran is combined with human and mystical concepts and employs the content and functional principles and frameworks. But the slogan of the modern movement was moving towards a new architecture in accordance with the progress of time, while the postmodern architecture considers the constant values of the past. But the present look at the future is different with the views of some architects like Jean-Noel. According to Jean-Noel, Look at the future is evolved through criticizing the current realities [16]. Foundations of modernity in Iran are different because of different groups with different perceptions. The general worldview is not consistent with historical, social and cultural requirements of Islamic Iran. All development theories have been developed by secular scholars. The main concern of secular thought is material progress of human at all costs. Accordingly, undermine or destruction of religious and spiritual aspects of human life is not an obstacle. Nowadays, we should establish a model required for development of Iran based on local circumstances and our religious, political, social and cultural teachings [17]. Vernacular architecture is affected by a wide range of different aspects of human behavior and the environment. This leads to different buildings in almost all different situations. The superficial and incomplete proximity of Iranian culture and architecture with modern technology led to abnormalities in the fields of architecture and culture. Accordingly, the appropriate intellectual and philosophical basis of modern technology and its influences on architecture should receive more attention [18]. Sustainable architecture approach requires a suitable local basis. An error may occur and the traditional or climatic design may be considered instead of vernacular design. The vernacular design is not to repeat what had been common in the past, but it may follow the traditional design processes. Climatic design is a part of vernacular architecture [19]. Traditional architectural education has no place in modern architecture and most of popular modern architecture styles cannot be found in the Iranian modern architecture. Modern architecture emerged in industrialized countries and created a new style to existing social conditions. This is why the Iranian modern architecture copied the major architectural works [20]. We should accept that modernity is a tool to help architecture. We must use this tool to achieve the objectives of Iranian modern architecture. Second, the intellectual and aesthetic achievements of Islamic architecture during centuries should be used to reach the purpose of the modern society, i.e. modern vernacular architecture (Figure 1).
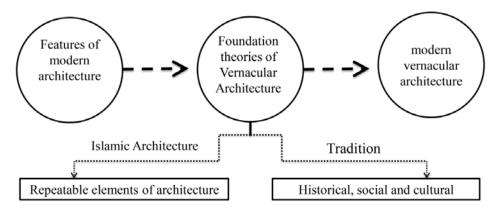

Figure 1. Describing the Vernacular Modern Architecture

4. Traditional Design in Modern Vernacular Architecture

Understanding and use of traditional knowledge will enhance human thinking and culture. According to Fathy, "the basic principles of traditional solutions should be respected. This is the only way that the modern architecture may employ to overtake the success of vernacular architecture in different parts of the world in terms of human and ecological quality" [22], this knowledge should be recognized. Most of vernacular technologies, resources or forms are appropriate and sustainable. However, it should not be ignored that some of them are no longer functioning properly because of changes in cultural and environmental conditions. Pirnia, Memarian, Tavassoli and ghobadian conducted many studies on vernacular architecture. But all of them have a historical perspective and described various functions of buildings in the past [23]. The most important concern is that how we can use vernacular architecture technology to design buildings working well in the future. In this context, the key challenge in the twenty-first century is to learn the basic rules and principles of vernacular architecture and to find ways to integrate these rules with development plans to enhance existing habitats and to design new habitats. The key challenge is that how knowledge, skills and experience gained from vernacular architects may be applied as an effective tool in a modern context. A method is required to enable us to test the actual performance of the vernacular traditions. This method must also enable us to understand how to use the vernacular architecture to design sustainable future buildings. Vernacular architectural education includes "traditional" and "academic" education. Training dedicated and professional architects, the design of vernacular models based on Islamic thought as wells as

the needs and possibilities of the country are essential for architectural education in Iran [24].

It is necessary to identify and review all elements of traditional architecture, but it is not enough. Traditional construction methods and principles are complex. This language has its own architectural rules and methods. Hobka calls the way to apply rules "traditional design". This is completely different from academic and formal architectural teaching methods [25]. In universities, the traditional architectural designs are just ideas on paper or primary issues in the students' projects. The same has penetrated in graphical thinking. The functions and components of traditional architecture are not presented properly. Despite the teacher and student mastery of all concepts of traditional architecture, the design is treated as a goal apart from understanding the traditional architecture. As was pointed out, if vernacular architecture is considered apart from the art function for optimal design and its academic aspects are trained in universities as a concept completely detached from any sense of taste and style, we will see a targeted trend in architectural education.

5. Case Study

In this study, Msc students and architects were provided with a questionnaire to use a suitable orientation for the research. The questionnaire consisted of 7 questions, including 3 main questions and 4 backup questions (Table 1). The sample consisted of 53 subjects including 32 engineers and 21 Msc students regardless of gender. The population was selected to distinguish between those who are studying at higher levels. The design engineers are designing buildings using previous teachings. Respondents were asked to mention their universities.

Table 1. Analysis of questions

	Question	Objective	Results
1	Are the architectural education models in universities suitable to solve the problems of future Iranian architecture?	The effectiveness of modern educations	Students and engineers who are studying in prominent universities were satisfied with effective education. However, educations are not functioning properly in other Iranian universities.
2	Do you agree to include a course on traditional architecture to syllabus?	The need for traditional architectural education	All respondents emphasized the need for traditional architectural design. They also emphasized the reluctance of professors to teach traditional architecture. In addition, scientific theories in the past cannot be applied in architectural education.
3	If the answer is yes, how vernacular and traditional architecture should be taught? As workshop or theoretical units?	Separation of scientific and practical propositions	
4	What is the main problem with the current architecture, the lack of emphasis on vernacular architecture or non-use of modern architecture in architectural design? "	Distinguish between vernacular and modern architecture	The lack of insight and knowledge in architecture. The lack of workshop and practical courses on vernacular and traditional architecture. The theoretical topics of modern architecture cannot relate these two factors properly.
5	Is remodeling of vernacular and traditional Iranian architecture in the form of modern Iranian architecture effective and useful for contemporary and future architecture?	The effect of vernacular and traditional architecture on modern architecture	The integrity of traditional architecture with modern architecture should be preserved. There should be no gap in the course of traditional architectural harmony and progress toward modern architecture. The practical and scientific propositions should be first defined in vernacular and then in modern architecture.
6	Do you use the patterns of vernacular architecture and traditional architectural elements in your design?	The need for appropriate use of the vernacular architecture	All students used these models in their architectural designs. In contrast, engineers did not used the models because of client intervention and its related factors in architectural designs, lack of knowledge about the functions and form structures of the vernacular architecture and the failure to implement architectural plans.
7	If your answer is yes, do you use them structurally in your designs or in the form?	The need for affected vernacular architecture	

5.1. Analysis of Questionnaire

Lack of understanding regarding the future is evident in the architecture. Technological and industrial growth and

the rapid changes of urban life had many influences on human culture and the environment. Architecture future and the student's education also affect the process of change. Below, we will examine three main questions. To respond the first question, the majority of respondents

emphasized the ineffective educations for solving the current problems. In architectural design, vernacular architecture is clearly defined beginning, but as understanding of vernacular architecture is very pale in the design situations. Definitions and vernacular architectural theories are not enough to solve the problem. These definitions are not functional and thereby do not lead to the Iranian architectural designs (that are practically available). Despite vernacular architectural education, the vernacular architectural design methods are not applied

The fourth question concerns the use of vernacular or modern architectural designs. It does not mean the ineffectiveness of vernacular or modern architectural designs. Perhaps, vernacular or modern architectural designs are properly implemented alone to provide a complete architectural design, but the problem is to use the vernacular and modern architecture for future architectural designs. The analysis of this question showed

that the important issue is the lack of distinguishes between vernacular and modern architecture.

The fifth question concerns remodeling of Iranian vernacular architecture functions in the form of modern architecture. Vernacular architecture is the focus of recent architectural studies. Vernacular and traditional houses become popular research projects indicating the climatic architectural principles. Unfortunately, these studies mainly described the qualitative performance and the relationship between different types of buildings, materials, construction and local climate. In this context, there is a lack of qualitative tests and analyzes. There is not the restoration of essential functions of vernacular architecture and design models. These studies only outline the functions theoretically and provide an accurate model of performance in new buildings with modern appearance to meet the needs of modern society (Table 2).

Table 2. Results survey questions

Group		Q1	Q2	Q3	Q4	Q5	Q6	Q7
Architects	N	32	32	23	32	32	32	24
	Mean	2.16	1.28	2.30	2.31	3.81	2.06	2.17
	Median	2.00	1.00	3.00	2.50	4.00	2.00	2.00
	Grouped Median	2.17	1.28	2.30	2.38	4.00	1.91	2.17
	Variance	.717	.209	.949	.609	1.319	1.157	.145
	Range	3	1	2	2	3	4	1
	Std. Deviation	.847	.457	.974	.780	1.148	1.076	.381
	% of Total N	60.4%	60.4%	59.0%	60.4%	60.4%	60.4%	60.0%
	% of Total Sum	55.2%	61.2%	60.9%	62.7%	60.7%	55.0%	59.1%
	Sum	69	41	53	74	122	66	52
Student	N	21	21	16	21	21	21	16
	Mean	2.67	1.24	2.12	2.10	3.76	2.57	2.25
	Median	3.00	1.00	3.00	2.00	4.00	2.00	2.00
	Grouped Median	2.58	1.24	2.13	2.14	3.92	2.45	2.25
	Variance	1.533	.190	1.050	.790	1.390	1.657	.200
	Range	4	1	2	2	4	4	1
	Std. Deviation	1.238	.436	1.025	.889	1.179	1.287	.447
	% of Total N	39.6%	39.6%	41.0%	39.6%	39.6%	39.6%	40.0%
	% of Total Sum	44.8%	38.8%	39.1%	37.3%	39.3%	45.0%	40.9%
	Sum	56	26	34	44	79	54	36
Total	N	53	53	39	53	53	53	40
	Mean	2.36	1.26	2.23	2.23	3.79	2.26	2.20
	Median	2.00	1.00	3.00	2.00	4.00	2.00	2.00
	Grouped Median	2.31	1.26	2.23	2.30	3.96	2.11	2.20
	Variance	1.081	.198	.972	.679	1.321	1.390	.164
	Range	4	1	2	2	4	4	1
	Std. Deviation	1.039	.445	.986	.824	1.150	1.179	.405
	% of Total N	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
	% of Total Sum	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
	Sum	125	67	87	118	201	120	88

6. The Educational System of Vernacular Architectural Education

The design models and sustainable architecture education are the most important factors for the targeted architectural design and an effort to achieve the best practices for designing and building the current generation and transferring this knowledge to future generations. The effect of these efforts can be expressed quantitatively. To review the architectural education and its use in the future,

three main aspects of vernacular buildings, including physical and cultural aspects, thermal comfort and functional aspects of vernacular buildings should be compared with modern buildings [23]. Nowadays, there are evaluation systems to compare sustainable and unsustainable buildings in some countries. In these countries, sustainable design is considered to be a model. Since the evaluation criteria are varied depending on the application, location and construction method, the architectural system should be first localized to use them in special projects and locations. The University of Oregon holds courses on environmental control system to

study a design problem using "multiple scales" model. The problem is solved at various scales of global, regional, micro-regions, site, building, elements and finally in relation to users [7]. Vernacular architecture can be considered as a source of architectural education to provide modern vernacular architectural models based on the following features:

Cultural Identity: Exploring and understanding the needs and limitations of the past based on today's culture, traditions and needs.

Materials Science: Understanding limitations imposed by the material and the skills of builders to exploit the resources.

Historical: Recognizing the legacy of a conventional building base on documents.

Performance: Understanding the functions of vernacular buildings in accordance with the form.

Structural: Identification of the most appropriate form utilizing existing materials.

Architectural Elements: Understanding the basic forms of architecture and its development of indicative architecture.

Local Planning: Understanding the placement of parts, separation of functions and hierarchical separation of space in the local urban planning. Training architects and architecture professionals need proper education. Architectural education needs to be seen in relation to the vernacular process. Vernacular architecture studies provide useful insights for the design of modern buildings, relying on clues from local buildings. The architectural education can be defined to include all cultural, vernacular and traditional features. Capoun emphasizes the role of concepts, ideas and infrastructures on architectural education [26]. Aesthetic concepts and practices of vernacular architecture cannot lead to sustainable development. The models of architectural education with the aim of learning the vernacular architecture in modern art and architecture may solve many problems of the present and future architecture. Future architectural models are dependent on architectural technology and modern technology. These models can be explained and cannot not merely employ as a solution formula.

Therefore, understanding of vernacular architecture in modern architecture to provide a modern vernacular architecture requires basic theories and strategies dependent on their needs (Figure 2).
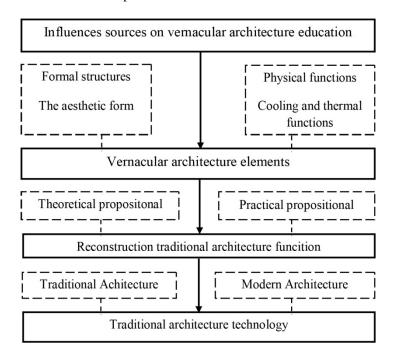

Figure 2. Training of Vernacular modern architecture

7. Conclusions

Research projects that explicitly examine the use of indigenous knowledge and skills in modern architectural techniques are scarce. There are few studies on vernacular architecture. However, some basic facts and vernacular functions are available. Few studies have identified the basic rules and concepts of vernacular architecture. In this regard, three strategies and the basic patterns can be considered for the vernacular architecture consistent with the future architecture:

The correct definition and understanding of the vernacular and traditional architecture functions

Description of principles and performance of traditional architectural elements

Restoration of traditional architectural technology and its compatibility with future architecture

Architectural studies must consider a method to use traditional architectural technology in future environments. Vernacular architecture needs targeted education. The most important thing is architectural education methods. Students need practical design workshops to deal with vernacular architecture in architectural designs and similar design situations. The level of vernacular designs can be improved through considering various components of the space and functionality of vernacular architecture as well as sociological, economic, cultural phenomena connecting the structure of modern society and creates a native style.

To address the vernacular architecture, architecture should be investigated as a cultural phenomenon and the continued stability of human values with which the designers can become familiar with rapid changes of the modern society. Educational programs in architectural schools need to provide students with a deep understanding of the history and culture of the Iranian society. Students need to distinguish between what is valuable and lasting and what is obsolete. For this purpose, some of the fundamental assumptions of modern vernacular architecture, including the performance and proportionality should be considered as criteria to study the vernacular architectural heritage.

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