

Teaching Architectural Design

(A Comparative Study of Past-Oriented and New Approaches in Iran)

Shirin Yazdani¹, Asmae Rashidi Mohammadi²

¹ M.SC in Architecture, Iran University of Science and Technology. Shirin_y8062@yahoo.com

² M.SC in Architecture, Azad University, Science and Research Branch. Asma.rashidi@gmail.com

1 ABSTRACT

Evaluating and improving architectural training is the constant concern of university departments, instructors and students of architecture. The present article aims at improving architectural training by studying the issue and arriving at a solution within the framework of an analytical-comparative study. As the first step, it investigates the particularities of the first approach through historical and library-based research. In order to determine the principles of the second approach, it then examines two case studies in Iran (Tehran University and Beheshti University) in the framework of field studies and interviews, while by analytical document studies it looks at two foreign schools of architecture, and through comparison determines the shortcomings of the training system in Iran. The studies impressed the point that while having some merits, an approach engrossed in the past is something that belongs to a gone-by age, and that because of the changed paradigm and the views that exist toward architecture in the world today, new directions would have to be considered in relation to architectural training.

Keywords: training, architecture, studio system, school of architecture.

2 INTRODUCTION

The issue of teaching architecture is of great significance to professionals of the field of Architecture and since the area of designing is among the pivots of teaching architecture, so enhancing the quality of teaching seems necessary. There are a variety of perspectives regarding teach architectural courses in Iran among which two are considered as more important:

Experientialist, retrospective approach

Paradigm shift and Modern approaches

According to the success of the previous methods, a group suggests referring to the past experiences like atelier system whereas the other pursues modern approaches stemming from new paradigms developing across the world. As a result, two experientialist and modern approaches are comparatively studied here. The article first addresses educational system of the school of fine arts and its atelier system to express the first approach and its dominant principles and then for describing the second approach and determining major pivots of education in the world of today, some international and national architecture schools are studied and in the same regard Research Atelier of Shahid Beheshti University's School of Architecture and Atelier 5 and 6 of the School of Fine Arts in Iran and Delft University of Dutch and AA Architecture School of the UK are explored and comparatively studied and in the end conclusions will be provided.

Approaches		Case
First approach	Experientialist, retrospective, past-oriented	Past experiences of the School of Fine Arts Atelier system
Second approach	Modern approaches	Research atelier of Beheshti University – Delft University, Dutch Atelier 5 & 6 of Tehran University – AA Architecture school, England

Table 1: approaches under study in teaching architectural design

3 FIRST APPROACH: EXPERIENTIALIST, RETROSPECTIVE APPROACH

Regarding glorious background of the School of Fine Arts – Tehran University in educating outstanding architects and also its experiences of atelier system, some believe that using the past experiences can be a good solution for the issue in teaching architecture. Accordingly, one of the main perspectives in teaching architecture design is returning to the past and reviving the past experienced method, namely, atelier system. Now, to uncover the principles of retrospective approach, we address educational system of the School of Fine Arts – Tehran University and its atelier system.

However, it must be mentioned that here by atelier system we mean not inflexible system dominated over French School of Fine Arts (Bouzar), in specific, rather the method used in teaching architecture in the School of Fine Arts – Tehran University in particular before 1969 and educational system reforms which of course adopted its general policy from France Bouzar educational system.

Also, it must be noted that of the main factors in gradual decrease of atelier system credit were the paradigm shift and the philosophy of education throughout the time. To put it another way, atelier system belonged to era when fixed principles of architecture were taught by the teacher to the student, and the conditions were set so that the architect was nurtured to answer predetermined questions and the same disciplines were transmitted to the student. Nevertheless, today architectural issues are very changing and the architect must be educated to respond several and undetermined number of questions resulted from contemporary societies. On the contrary, another group believes that based on the above mentioned evolutions the approach is not responsive in current era.

3.1 Educational System of Tehran School of Fine Arts

Educational system of the School of Fine Arts – Tehran University is based on French School of Fine Arts (Bouzar) system the basis of which was actually established based on form, art and considering designing.



Figure1: the School of Fine Arts



Figure2: the School of Fine Arts in 1963

There were two kinds of teaching methods in Bouzar system: theory in classroom and design in the atelier. Here, design was considered as the backbone of the curriculum and as a result ateliers had a significant status so that the students spent most their education course in them. So, the long term of the students' presence in them inspires a sense of belonging to and fond of the faculty environment.

In the method, the student entered the atelier and remained in the same atelier and under the supervision of the same teacher till his graduation, and was informed of other teachers' comments only at the judgment of the works. Also, the instruction was so that the newcomers did not only learn from the teachers, but also from the more experienced students. "Every atelier or workshop had a director called atelier chief who was selected from among the approved outstanding students. Beside controlling attendance - at the time of

teacher correction – he helped those students who could not get required score of projects and sketches to pass the course so that they could use the ability of skillful students and get required score and finish the school" (Saremi, 2008).

So, atelier had always been lively places and in particular at the time of corrections, the students from previous and later years attended with a great zeal and discussed the projects. "in the sphere – in addition to learning architecture - the interested students become familiar with other issues, because the ateliers were the only space where the interaction between the students happened and as a result morality, social life and cooperation were clearly demonstrated" (Tabibiyani, 2008).

3.2 Workshop System Description

Each of the educational systems had its own pros and cons none of which this article is aimed at advocating. However, the significant point is the role of ateliers and their effects on the process of teaching architecture. Here, the atelier is used as a system used in the School of Fine Arts for a while and its major tents and principles are adopted from French Bouzar system and the teachers educated there some features of which are going to be described in the following section:

	Administering university	Curriculum
Atelier system	Tehran School of Fine Arts	<ul style="list-style-type: none"> Grouping the students in different ateliers Conducting each atelier by a certain teacher Teaching the students in a fixed atelier all the way through their education Teaching design in ateliers by well-known professors The necessity of the students' continuous presence in the atelier A closed focus on design courses rather than theoretical courses Collective evaluation Specification of architecture principles and teaching them to the student Teaching the newcomers by the elder students Ruling a discipline over atelier Starting to design by sketch Further focus on the art of architecture Separating between teaching architecture and profession of architecture Great focus on presenting suitable projects Lower focus on the theoretical principles of architecture in the process of designing Reinforcing the spirit of cooperation at the same time of competition Beginning to design immediately after entering the atelier

Table 2: characteristics of atelier system

4 SECOND APPROACH: MODERN APPROACH

The second approach in teaching architectural design believes that updating and innovation are of the prerequisites of the field regarding the paradigm shift and modern evolutions in architecture and teaching arenas. "Today, architecture is not limited to presenting beautiful sketches of the ideals of an architect and teaching architecture is not feasible in a limited space of determining the place of the rooms and placement of the spaces in the site plan" (Yarzadeh, 2008).

By expansion of the domain of communications by internet and technological advances, atelier system slackened and architecture underwent evolutions in time and regulations and rules of modern architecture were extinguished. As a corollary, ateliers could not maintain their previous power. However, today some of the characteristics of atelier are applied to encourage the students to attend the atelier and use experienced students' abilities there, yet it is not possible to insist in its complete administration.

So, today, new issues exist in teaching. Based on some interviews with some experiences professors of architecture in different faculties, most of them – beside approving some positive points of atelier system – believed that that system fitted the time when architecture could be dictated. And the student learnt fixed principles from the teachers mostly educated in France and transferred them to the newcomers, however, now and by moving to the modern world, all of those musts and must nots are faded. In since architecture principles are not fixed at the schools of architecture – despite ateliers always have a great importance – faculties are no longer dominated by a closed educational system yet more focused on the quality of teaching rather than limiting it to a certain system. Gradually, presence of different expertise related to architecture increased in design process and a wider spectrum of the issues entered the field of teaching architecture and then the atelier system could not response the new demands. Results of the studies show that principally the idea of the student has become significant in both teaching and evaluation courses in architectural schools. So, the student is involved in teaching process and his role become more tangible. As a result, the students' interest, zeal and talent have found a chance to flourish.

On the other hand, advent of computer as well as high speed of performing the works have resulted in a deep three-dimensional understanding of the designs by the students and also provided the chance for more accurate evaluation by the teachers. Among other major issues of today is the focus on evaluating architecture projects, because results from educational system success or failure are measured by evaluating the projects. Also, today, teaching architecture is no longer isolated yet responsive to real demands of the society and projects must pay attention to the modern issues of the society as well as environmental issues, sustainability, controlling sustainable environmental conditions and the like in designs.

So, there have been studies conducted on modern teaching methods and perspectives of different professors as well as the experiences of Iran and the world schools of architecture including Delft in Dutch, AA in the UK, School of Fine Arts – Tehran University and School of Architecture, Shahid Beheshti University as well as some other faculties were examined. Results demonstrated the foci of teaching designing in different architecture schools of the today world.

4.1 Studying Iran Architecture Faculties Cases

Today, teaching method of architectural design are relatively the same in different schools of Iran and each of the teachers conducts atelier by his own knowledge and experience, so – although the ateliers are still alive in different schools – there are different management methods in them cause of management system of the teachers and also curriculum of each university. It seems that today none of the schools just focus on a certain system (i.e. atelier system) in managing the ateliers.

However, there have been attempts to boom the ateliers again, yet the end is not to fully hold the atelier system rather an attempt to take some advantages of the past and integrate them according to the demands of today so as to enhance the credit of atelier and get back life in there. In the same regard, the School of Fine Arts – Tehran University and the School of Architecture - Shahid Beheshti University shave made a move which is described in the next section.

4.1.1 Research Atelier of Architecture Faculty, Shahid Beheshti University

"upon the past experiences of Shahid Beheshti University's School of Architecture regarding teaching architecture, in 2004, a group of the professors decided to enhance the quality of teaching architectural design and established a workshop as "research workshop". The workshop is the place where educational activities suited best with the curriculum of the faculty are conducted" (the released statement by research workshop of Shahid Beheshti University, 2008). So, as cited in the formulated curriculum of the workshop, the main objective of establishing the research workshop is trying to improve the conditions of teaching architecture considering both content and method.



Figure3: correction session of the research atelier



Figure4: group work at the atelier

In the workshop, various groups of different years students get started designing in a common context, so in addition to horizontal groups, there are vertical groups formed inspiring and enhancing the spirit of collaboration and cooperation among the students of the same year and different years. The leadership of the atelier is on an experienced teacher and a specific teacher is considered for each of the designing courses, as a result, usually about three teachers are present at the atelier at the same time. On the other hand, sometimes other experienced teachers are also invited and students can make use of different teachers' points of views during their education.

Research Workshop Statement:

Based on the formulated statement by research workshop teachers, the workshop employs a series of fundamental principles to improve teaching architecture as follow:

Creating the power of creation and creative thinking in the students

Getting familiar with the essence of Iranian-Islamic culture as an architectural identity capital of the student.

Putting the pledge on the students' self-examination and self-discovery

The followings are among the major points included in the statement:

Collective learning

Self-stimulation in posing questions and responding it by collective attempt and discussion, studying and thinking is among the effective methods employed in the workshop

Creating discussion and seminar groups and short-term workshops during the semester and creative and active participation of the students to respond the questions posed in the workshop

Common context for different projects to achieve coherent collective activities in the workshop

Continuous and accurate recording of the activities of the workshop as well as recording the activities of each of the members in an agreed form by the teachers themselves for the continuity of the experiences

4.1.2 Fine Arts Architecture Faculty, Tehran University (Workshops 5&6)

In the school, there have been attempts to boom the atelier and enhance the learning level. In the same regard, since 2001, newcomers are divided to two equal groups taught by the conventional method for two years, then in the second two years of the bachelor's, they are collaboratively divided to two ateliers as workshop 5 and 6 and do design 2 to 5 courses there and remain in the ateliers for two years. As a result, this vicinity of the students of the different years contributes to teaching quality enhancement to some extent.



Figure5: atelier5,students'works presentation



Figure6: atelier6

A positive point of the atelier is establishing rapport between the students in the class. Doing so and to create a sense of belonging to the atelier in the students, meetings are held on different occasions.

Of the major points in teaching process in the atelier is focusing on the students' creativity and trying to discover their talents and nurture their creativities. Accordingly, establishing such an environment and holding conversation and discussion and collective behaviors sessions are all in the line of improving the quality of teaching.

4.2 Studying Foreign Architecture Faculties Cases

To employ the experiences of architecture schools of the world in teaching architectural design, two schools of architecture (Delft, Dutch and AA, UK) were studied and their priorities in teaching architecture were determined.

4.2.1 AA Architecture School

"AA School of Architecture¹ is the oldest and the most significant school of architecture in the UK established independently in 1847 by a group of architects. The management of the school was on Dr. Mohsen Mostafavi – an Iranian architect – in years 1995-2004 and - after transfer of Mostafavi to the dean of Kornel University – it is administered by Berth Steel now". (www.aascool.ac.uk)

"the school is aimed at enhancing the quality of teaching architecture and conducting researches to change the status of the architecture. Among the significant points in this educational center is the focus on the element of creativity and innovation in the students and helping them to grow and nurture it"(Mostafavi, 2004).



Figure7: AA gallery



Figure8: interior space of AA



Figure9: AA School. www.aascool.ac.uk

Of the major teaching principles in the center are:

- Focusing on the students' creativity and talent and its nurture and growth through different ways
- Focusing on researches and studies inducing change in architecture status rather than educating architects to work at architectural offices
- Focusing on modern architecture and concurring it: high-tech is one of the categories in AA
- AA has never limited itself to a particular school of thought or style but aimed at using different methods to enhance quality of teaching architecture
- Encouraging the students to use computer and architectural softwares beside handwork and understand the relationship between computer and the limit of handwork in employing the capabilities of the human
- Getting out of the traditional form of the workshop and holding the workshops on a forestry land where there are different buildings and executing the projects even in the real-scale
- Focusing on the relationship between architecture and other fields of studies especially structure and construction engineering
- Focusing on an understanding of materials and a touch of it and various methods of construction and design and production of creative designs using them
- Dividing different groups of the school and assigning each a research subject
- Focusing on the relationship between architecture and mass production
- Providing the possibility for the students to discover and experience different issues

- Focusing on the possibility of providing various functions beside the main function of the project (multi-functionality)
- Focusing on space change, for instance, space changes at nights and days and on the other hand form and function changes
- Focusing on designing in critical conditions like earthquake and etc
- Focusing on research regarding the relationship between architecture and urban planning and also landscape
- Focusing on the effects of different political, social, economic and the like factors in architecture and urban planning
- Focusing on geometry and increasing considerable presence of it in architecture
- Studying and exploring and discovering future architecture and new situations in architecture in addition to form and function" (Mostafavi, 2004).

4.2.2 Delft Faculty, Dutch

"Delft University of Technology, Dutch was established in 1842 in Delft City as the Royal Academy by the order of King William II and called Delft University of Technology in 1986".(www.tudelft.nl)

Delft University of Technology is the greatest and oldest technology university in Dutch and is focused on the requirements of 21st century. Complexities of technology and social requirements are increasing. So this university puts its pledge on nurturing the student to fit the international demands. The students educate in cross-disciplinary projects so they not only have an insight into their field of study but also become aware of the other fields as well." (www.hoodnist.com)



Figure10: students in atelier



Figure11: site plan of the universit, www.tudelft.nl

"Delft University of Technology works with many research and educational institutions at national and international levels and also has a wide range connection with the government, commercial, industrial organizations and small and big companies. The university comprises 8 faculties including aerospace engineering faculty, applied sciences faculty, architecture faculty, structure and geo-sciences engineering, electrical engineering and computer sciences, industrial designing engineering, mechanical engineering and naval engineering, management technology faculty".(www.tudelft.nl)

School of Architecture: "teaching bachelor's degree is usually administered for native students in Dutch language which can be said to have the same educational structure as the most schools and faculties of technology have, however, in MA and PhD degrees, a particular system is provided for the student and researcher" (Bazrafkan, 1999).

In MA, four major fields of study are presented including architecture, urbanization, structural technology, housing and mass construction and two integrative fields as architecture-structural technology integration and architecture-urbanization integration (Bazrafkan, 1999).

Today, designing is taught in ateliers at Delft University, Dutch. Yet the students use the up-dated knowledge and equipments and the relationship between them and between the students and professors is

established by internet, computer and computer network as well as atelier space". Faculty of architecture could make it to provide a different teaching and education through developing the curriculum with a reference to research designing. Developing a variety of curriculum in architecture, urbanization, structural technology, housing and some integrative fields have drawn a wide range of architecture audiences for higher education" (Bazrafkan, 2008).

Among the major foci of the university in teaching method are:

- Architectural design-centered teaching
- Researching design or research through designing
- Focusing on up-dated subjects in designing
- Focusing on the relationship between teaching architecture and architecture occupation
- Coherent educational system despite the present of different majors
- Focusing on technical and structural issues and application of technology
- Focusing on the relationship between design course and other courses

And here there has been a special focus on evaluating the design projects and in particular in recent years

"On the other hand, teaching method of design courses is also fitted the talent and learning levels of the students. In the method, scoring system must also justify the end and show the occupational capability of the student. So, the students are evaluated by the pass or fail score and in case they pass they can move to the next degree. As a result, teaching and evaluation are integrated. To improve teaching, it is suggested that educational accomplishment exams are conducted during the educational course and also a series of subjective tests are administered based on each course. So, there has been an attempt to adapt the basic value with other features of the Delft University so that – beside progressing educational objectives – other concepts such as evaluation, self-evaluation and common-evaluation are also considered which in the end is for both the students and teachers" (Mir Riyahi, 2003).

"among the significant points of the method is that here the student plays a central role and starts designing based on transparent evaluation criteria and along with the main objective and then evaluate himself and get informed of the other students and teachers evaluation and consequently the possibility of approaching the main evaluation criteria is provided and teaching improvement leads to an improvement in projects evaluation" (Mir Riyahi, 2003).

Row	Faculty	Curriculum
1	Research workshop of Shahid Beheshti University's School of Architecture	Presence of multiple groups of different years' students in an atelier, focusing on the active role of the student, The two-year attendance of the students in just one atelier, continuous recording of the students' activities, Flourishing the power of thinking and creative thinking in the students, collective judgment of the works, Getting familiar with Iranian-Islamic culture as the capital of architectural identity, making seminar and discussion groups Self-examination and self-discovery of the student, common context for different projects, Collective learning, establishing rapport through collective activity, Self-stimulation via posing questions, focusing on real and social demands, Establishing relationship system, among the members of the workshop
2	Workshops 5&6 of the School of Fine Arts	Presence of multiple groups of different years' students in an atelier, focusing on collective work, The two-year attendance of the students in just one atelier, significance of the student's role, Focusing on the students' creativity, close relationship between the projects and demands of the society, Inspiring the sense of belonging to the atelier in the students, focusing on the students' talent, Administering meetings, seminars and special occasions, collective judgment of the works
3	Delft University of Dutch	Transparency of evaluation criteria and as a result designing criteria, teaching based on architectural design, Focusing on the relationship between teaching architecture and architecture as an occupation, Focusing on social area, Focusing on evaluation of the projects, Focusing on creativity, Integration of teaching and evaluation, Focusing on collective work, Focusing on the major role of the student in teaching process, projects at service of the society, Selecting projects based on the up-dated subjects, Focusing on humanities subjects, Focusing on technological and construction issues of the structure, problem-based learning, Coherence of the educational system despite the diversity of the field, horizontal and vertical relationship between designing and other courses, Appropriate application of computer in designing process

4	AA University of the UK	Focusing on the students creativity, Focusing on collective work, Focusing on research and studying, Moving out the traditional form of the workshop, Focusing on the modern architecture of the world, Not depending on a certain school or style, Focusing on the skills in all related fields, Using manual work in the first years of atelier, Using tools and machineries of the workshop, Focusing on the relationship between architecture and other fields of study, Focusing on architecture with mass production, using materials, Sending the students to deprived areas to work there, Cross-functionality of the projects, Focusing on increasing presence of geometry in architecture, Future architecture and discovering new situations
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Table 3: a summary of different faculties' curriculum

5 CONCLUSIONS AND SUGGESTIONS

In the article, two major approaches in teaching architectural design were studied and based on the abovementioned and dominant principles change, it was found out that the retrospective approach cannot be a suitable response to enhance the quality of teaching architectural design. Since a time went by the past principles are changed and as a result the main principle of atelier systems which was dictating architecture by the teacher to the student extinguished. Accordingly, based on the technological advances and time, now there are new factors involved in teaching and the modern approach is a more suitable alternative fitting best the demands of today.

However, it must be noted that the approach does not denounce the past methods totally yet uses some advantages of them and new methods and equipments in teaching. Also, to study the modern approach, the experiences of some national and international universities were examined; in which the approach was divided into two foreign and domestic domains and their priorities were determined in teaching.

It was found out that despite some differences in curriculums, there are a series of principles common between their formulae and it is possible to take great actions in Iran by studying and analyzing the differences and common points.

Comparing curriculum of Iran schools and the examples of international schools, it was determined that Iran schools have some deficiencies regarding the present status of the world. In general, the foci of teaching architecture in the world were determined specially regarding the perspective and educational philosophy so as to apply them to remove current weaknesses of domestic architecture schools, and concur with the architectural evolutions of the modern world.

Based on the conducted studies, teaching architectural design in the world of today which educational system of Iranian schools have deficiencies in administering them can be divided in the following general form:

Focusing on criticism and evaluation	Designing process	Applied teaching of architecture	Application of new facilities
Critical analysis in designing and focusing on architecture criticism	Focusing on the process of design and beginning to study and research	Focusing on the process of design and beginning to study and research	Using new instructional equipments
Face-to-face justification of designs and practical evaluation of the projects with the presence of both teacher and the student	Conscious inclusion of the computer in designing process	Focusing on the modern architecture and applying up-dated technology	Using new facilities in evaluation and quality control before construction
Significance of final project subject	The relationship between theoretical principles and design in designing process	Moving out the traditional form of the ateliers and a chance to experience constructions	Using materials and new methods in construction
Transparency of the theoretical principles of the project evaluation and correction	Focusing on psychological features of the student and including them in designing	Focusing on the architecture in low-income areas	Equipping ateliers with video projectors, internet and intranet
Using powerful and legitimized scientific methods to evaluate the projects	Focusing on future development and changeability of the design	Focusing on the relationship between teaching architecture and architecture occupation	Focusing on fair equipments to present students' work

Using computer to examine and evaluate the designs	Focusing on different aspects of architecture field and including them in designing	Focusing on thinking to the design in special situation like earthquake	Controlling the acceptance capacity of the student to provide them with better facilities
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Table 4: principles considered in design instruction

Results of the studies show that regarding the increasing development of the world and using new facilities and researches to improve teaching conditions, it is better not to revive the past methods, but use the advantages of these methods and also by examining and recognizing weaknesses of them to enhance the quality of teaching architecture based on the requirements of the present time.

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