THE ROLE OF INTERNATIONAL EXCHANGE PROGRAMS IN DESIGN EDUCATION: A CASE STUDY OF AN ARCHITECTURAL DESIGN COURSE IN JAPAN

Murat Dundar and Sinem Kultur

Abstract
The purpose of this paper is to discuss role of international exchange programs in design education based on experiences and outputs of the summer school course ICSA (Inter-Cultural Study of Architecture) held in Japan with the participation of Japanese and Turkish students for 50 days under the collaboration of Mukogawa Women’s University (MWU, Japan) and Bahcesehir University (BSU, Turkey). After the introduction, chapter One will compare educational methods used in architectural design courses. Chapter Two will mainly provide general observations of ICSA in Japan summer school course. In chapter Three, contributions of international exchange programs to design education will be discussed in terms of two different approaches. Finally, chapter Four will outline the main arguments discussed in this paper.

Keywords
International exchange programs, inter-cultural, design education, architectural design studio.

Introduction
The purpose of this paper is to describe and discuss role of international exchange programs in design education based on experiences and outputs of the summer school course ‘ICSA’ (Inter-Cultural Study of Architecture) held in Japan with the participation of Japanese and Turkish students for fifty days under the collaboration of Mukogawa Women’s University (MWU, Japan) and Bahcesehir University (BSU, Turkey).

Increasing efforts in expanding international study opportunities motivate us to think this matter as an integrated part of design education in the near future. For instance, UIA (International Union of Architects) wrote in the recommendations 2002 assembly that “…to facilitate international exchange, architects, researchers, and students” is among one of the two primary aims of UIA. Actually, in a different page of the same document, UIA explains the basis for this approach as follows: “architecture has always been international and cross-cultural by its very nature” (UIA XXII. General Assembly, 2002).

It is of great importance how to develop students’
creativity (Antoniades, 2008). Increasing students' intercultural sensitivities by promoting appreciation of cultural difference is also one of the most important issues that should be thought as an integral part of architectural education. There are several researches on the impact of cultural diversity in architectural design in general and on architectural design education in particular (Ketizmen, 2006; Mazumdar, 1993). Design studios have always been in focus since they are the places where students spend most of their times in learning design methods (Shoshi & Oxman, 2000). Schon's book (1985) 'The Design Studio: an exploration of its traditions and potentials' is a pionering attempt to explore the design methodology of architectural studio courses.

While there is a trend in current research activities to focus on education methods used in studio based courses, (Bar-Eli, & Oxman, 2000; Uluoglu, 1990; Ketizmen, 2002; Erol, 2006) the existing literature on the role of international activities in design education is too limited.

In this context, the international exchange program ‘ICSA in Japan’ is thought as an opportunity to discuss role of this kind of international activity in design education. There is another argument that has been put forward in an attempt to analyze and compare the methods of design education in studio courses in Japan and Turkey.

This paper is organized in four major chapters as follows: After the introduction, chapter One will compare educational methods used in studio-based design courses in different schools of architecture. Chapter Two will mainly provide general observations and comparative evaluations of ICSA in Japan summer school course. The first section of this chapter describes scope and objectives of the program, including an overview of education system held in Department of Architecture at MWU and basic steps of design process. The major observations and experiences drawn from this process will be presented in the following section with the aid of pictures and explanatory tables. Following that, in chapter Three contributions of international exchange programs to design education will be discussed in terms of two different approaches. Finally, chapter Four will outline the main arguments discussed in this paper, drawing them together to provide conclusions based on the outputs and experiences of the design course held in Japan.

**Comparative Analysis of Architectural Design Studios**

This chapter will compare educational methods used in studio-based design courses in different schools of architecture. These are some of the major issues that will be examined and compared in this chapter: structure of the curriculum, content of the syllabus, design topics, number of hours, formation of architectural-programs, project reviews, design critiques and examinations. This chapter of the paper is intended to provide guidelines for discussing, analyzing, comparing and evaluating various aspects of implemented methods in architectural design course education in several schools of architecture in Turkey.

By the term ‘design studio,’ we refer to the architectural design studio courses in which real-life architectural projects are thought—basic design studios are not discussed within the scope of this paper.

The design studio, “which is a place of
intellectualization, communication, transition, interaction, sharing and participation besides games and fun,” is the most stimulating and experimental part of the architectural curriculum (Kahvecioglu, 2007, p. 17). Design studio course is generally based on the following pillars: studio critiques, lectures, fieldworks, workshops, sketch problems, interim juries and final juries. Design teaching practices in most schools of architecture in Turkey base on a revision/critique tradition that might be called the mix of “Ecole Des Beaux Arts” and “Bauhaus”, which defines the process that respectively comprises functional analysis and then formal design reviews (Saglam, 2009). This approach, which can also be called as master-oriented studios, is still highly prevalent in studio courses in most schools of architecture in Turkey (Ciravoglu, 2001, p.18).

There are two types of architectural design studios in Turkey, which are called as horizontal design studios and vertical design studios— involving students from different grades working together. Although the most common type is the horizontal studio that involves students of the same grade, benefits of vertical studios are summarized by the instructors of those studios as follows: “Vertical design studios enabled students to achieve the objectives as being aware of different approaches; sharing knowledge and experiences, increasing competitive spirit, innovation and interaction among themselves” (Tokman et al., 2009).

Comparative analysis of architectural design studios in different schools of architecture in Turkey is presented in Table 1. The conclusions from this table are as follows:

1-) In terms of a comparison of the curriculums: each university has its own education method for architectural studio course—course hours, total number of course and the weight of it in the curriculum remarkably differ from each other. 2-) As can be seen from the third column of the table, there is no consensus on when to start the course of architectural design studio. The first studio course is given in different terms ranging from the first to the fifth. That is, total number of studio course differs according to the university (see the second column). 3-) Percentage of architectural studio courses ranges between about 19 and 31 percent. Besides, percentage of studio course hours ranges from 21 to 31 percent.

<table>
<thead>
<tr>
<th>University</th>
<th>Total Number of Studio Courses</th>
<th>The Form of the First Studio Course</th>
<th>Percentage of Studio Course Credits</th>
<th>Total Number of Studio Course Hours</th>
<th>Graduation Credits</th>
<th>Percentage of Studio Course Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bahcesehir University (BSU)</td>
<td>6</td>
<td>3.</td>
<td>28</td>
<td>19,7</td>
<td>644</td>
<td>142</td>
</tr>
<tr>
<td>Yildiz Technical University (YIU)</td>
<td>7</td>
<td>2.</td>
<td>42</td>
<td>23,33</td>
<td>784</td>
<td>180</td>
</tr>
<tr>
<td>Istanbul Technical University (ITU)</td>
<td>8</td>
<td>1.</td>
<td>38</td>
<td>24,91</td>
<td>868</td>
<td>152,5</td>
</tr>
<tr>
<td>Middle East Technical University (METU)</td>
<td>6</td>
<td>3.</td>
<td>48</td>
<td>29</td>
<td>1008</td>
<td>179</td>
</tr>
<tr>
<td>Mimar Sinan Fine Arts University</td>
<td>4</td>
<td>5.</td>
<td>32</td>
<td>19,27</td>
<td>672</td>
<td>166</td>
</tr>
<tr>
<td>Karadeniz Technical University (KTU)</td>
<td>8</td>
<td>1.</td>
<td>76</td>
<td>31</td>
<td>868</td>
<td>240</td>
</tr>
</tbody>
</table>

* European Credits Transfer System

Table 1: Comparative Analysis of Architectural Design Studios in Different Schools of Architecture in Turkey (The data is taken from the universities’ curricula). (Source: Authors).
Although, this table, which is based on formal curriculums of those universities, implies that design teaching methods implemented in different schools of architecture in Turkey are characteristically different, there is something that remains stable and common is the method of instruction—the relationship between tutor and student. This situation has been pointed out by Ciravoglu that “design studio curriculum has a dual structure, one of which is a formal curriculum; and the other one is a hidden curriculum” (Ciravoglu, 2001).

According to Yurekli (1991), the reason lay behind a hidden curriculum, which is one of the great danger in the studio, is the master-apprentice (one-way) relationship. Master-apprentice relationship in design education has still its dominance in the education system of most schools of architecture throughout the world.

A survey consisting of two questionnaires was conducted by the studio instructors at Yildiz Technical University (YTU) in 2000 to evaluate the ideas of the students and the educational staff concerning the studios and workshops. According to the survey both teachers and students agree that the master-apprentice method should not be used in the studio. What is interesting here is that students’ answers described the current method implemented by tutors as the contrary of this (Ciravoglu, 2001).

Design process in architectural studios in Turkey generally begins with analysis of existing situation of project area which consists of site analysis, functional analysis and contextual study. Sometimes a short term workshop is included to this part or the following this phase of the design process, which is generally completed in fourteen weeks. This information gathering session is approximately two to four weeks long, most of which are conducted as group activities so that students can work together to maximize their own and other’s learning (Johnson & Stanne, 2007). Architectural-programming is also expected to be completed by the students during this initial period of time. Additionally, project topics of design studios are closely linked to the current problems of existing sites.

**ICSA in Japan Summer Course**

Chapter Two will mainly provide general observations and comparative evaluations of ICSA in Japan summer school course.

**Scope of ‘ICSA in Japan’ Summer School**

The first section of this chapter describes scope and objectives of the program, including, overview of education system held in Department of Architecture at Mukogawa Women’s University and basic steps of design process.

ICSA (Inter-Cultural Study of Architecture) is the summer school course held in Japan with the participation of Japanese and Turkish students for fifty days under the collaboration of Mukogawa Women’s University (MWU, Japan) and Bahcesehir University (BSU, Turkey).

The main objective of this course is to provide students with the opportunity to experience unfamiliar design process and to observe the role of ‘cultural interaction’ in the design studio education. This program also aims to create a greater awareness of significance of cultural background in design developing process.

MWU’s curriculum satisfies the requirements of UIA/UNESCO charter for architectural education. Each design studio course, which occupies 50%
of all scheduled class hours, comprises three different design topics for one term, each one of which is completed in seven weeks in total. Principally, lectures are given in the mornings and design studios in the afternoon, which are conducted three times a week from 13:05 to 16:20 O’clock. In addition to this, regular field trips are organized for architectural students every Saturday in accordance with the concepts that they are studying in their studio classes. The weekly schedule of the third and fourth grade students of architecture can be seen in Table 2.

Table 2: The Weekly Schedule of the Third and Fourth Grade Students (MWU, weekly schedule). (Source: Authors).

The changing role of studio-instructors in architectural design education is crucial since, as Kahvecioglu has pointed out, “The instructor was the key factor in the studio in fostering creativity by influencing students by, for instance, being tolerant, taking risks and being pro-active.” (Kahvecioglu, 2007). At MWU, totally four supervisors, one of whom is part-time instructor, conducted the design studio courses and forty-four students attended the studio. Students of Bahcesehir University (Istanbul, Turkey) are assigned to the third and fourth grade architectural design studios in a manner so as to be four students for each.

Students are not assigned to a group or a tutor. Thus, they may get critique and comment of different instructors in the same class hours. This method is closely linked to the spatial characteristics of design studio. Student-space interactions in architectural-design studio spaces are significant for improving the success of design education. As can be seen in the results of a survey conducted in the Department of Architecture, Faculty of Engineering and Architecture at Gazi University, (Dinc, 2007) studio place is expected by the users to be specially designed only for this purpose.

At MWU each student has individual workstation providing a drafting desk (90cm by 180cm) that is equipped with computer, cabinet and all the necessary drawing tools (Figure 1). In addition to the scheduled times for design studio course, students of architecture at MWU are expected to be working in the studio during outside of regular school hours. A survey conducted by Dinc showed that having an individual unit in design studios, which can also be used after course hours, is one of the major requirement claimed by students (Dinc, 2007).

The most essential activity in design education
process is the ‘desk crit’—a one-on-one critiquing session (Goldschmidt, 2002). For desk crits, an instructor visits students’ individual workstations to review their work, while other students continue to study on their design work. At MWU, students are not obligated to get critique or comment on their works for each time of the course day.

Apart from the desk critiques, students are gathered to pay attention to the explanation delivered by instructors in the shape of question and answer sessions (Figure 2). During these sessions, which are kept short—between five to fifteen minutes in length—to maintain concentration, interest and enthusiasm, some students get to share their works, and the other students and instructors reviews what they did by asking them questions and making comments.
Another interesting observation about the architectural studio at MWU is that some instructors develop design proposals simultaneously with the students. This, especially, create an opportunity for the students to see how to start a design process. The design developing process of the studio at MWU can be summarized as follows:

Step 1: Gathering information about the design problem and the project site (This step includes daily field trip to the actual design spots—project sites, hearing the representatives of local administration and local community).

Step 2: Concept evolution and developing design proposals through sketching and model making. (2D and 3D drawings in 1/2500 scale for the fourth grade; 1/50 scale for the third grade.)

Step 3: Furthering the design through the more detailed model-making applications (scale: 1/200), technical drawings and 3D model practices.

Step 4: Final presentation (submission of the projects including technical drawings in various scale, site model, and renderings).

Each student prepared models in different scales at least for three times during the process (seven weeks in total).

Observations of ICSA in Japan Summer Course

The major observations and experiences drawn from this process will be presented in this section with the aid of pictures and explanatory tables. The names of the subsections, which will be examined in some detail, are as follows: Real-life Project-Topics, Programming and Conceptual Approach, The Role of Architectural Model in Design Process, Participation in Formal and Informal (non-curricular) Activities, Importance of Final Juries.

Project topics (design problems)

Architectural education at MWU mainly relies on concrete cases. Design topics are closely aligned with the requirements and the problems of modern society. Each design topic is offered with different emphasis in detail. The sites chosen for the project are determined to be related with the current problems of the local community.

Design topic of the third grade studio (Architectural Design Studio III) was to design a tension membrane structure covering the whole platform of Koshien Station, which is the main entrance of one of the most famous baseball stadium of Japan, to create an innovative, spectacular spatial effect in harmony with the built environment.

Fourth grade students (Architectural Design Studio V) were expected to design for the development of a waterfront area on a manmade island in Minami Ashiya, which was constructed in 1970s but had remained functionless for many years, in an urban scale as to meet expectations of local people and administration.

Both design topics are closely related to the current problems of Nishinomiya where the university is situated. Getting involved the representatives of local administration and technical experts from private or government sector in the process from the very beginning to the final jury does not only provide the necessary technical information, but it also keeps students interested and motivated to what they are doing.
Architectural programming and conceptual approach

The terminology of each topic that is to be used during the design process is clearly explained from the beginning. Outline of architectural programming in general was given at the beginning of the studio courses. Students are expected to concentrate on developing design concepts rather than creating proposals for an architectural programming. The formation process of architectural programming was supported with fieldworks, slide-show lectures and seminars given by the experts. All of these organizations are conducted to assist in defining mutual expectations and needs about the project topics. Furthermore, all these activities, which might be defined as extracurricular for most schools of architecture, are interlinked and organized at MWU as the fixed schedule of standard design course from the beginning.

As we have stated earlier, three design topics are studied in one term at MWU, each one of which has to be completed within a time period of seven weeks. This was really the primary concern for us prior to this summer school since our students were not accustomed to developing design proposals in such a short period of time. Design process in architectural studios in Turkey is generally completed in fourteen weeks, two to four weeks of which are devoted to the information gathering session to get students familiarized with the project topic.

The role of studying with architectural model in design process

Architectural model making is indispensable for a design studio in Japan. It is not regarded as just a presentation technique; but goes beyond it by using architectural model making as an integral part of the design process from the very beginning of the studio course.

In most countries including Turkey where students generally see ‘building a model’ as the requirement of their curriculum and they have no idea how to proceed. As a result, it is something that is left to be completed at the end of the process. The situation is contrary to this in Japan—after the announcement and explanation of project topic, the first thing is to make a physical model of project site in existing conditions. Moreover, this analyzing phase often goes beyond the boundaries of the country by making model of famous buildings or part of city settlements from an abroad in accordance with the project topics that they are studying in their studio. The process of making architectural model teaches the students to comprehend the three dimensional totality of the project—a building, a city, or a region.

The key design decisions made regarding the scope and objectives of the project are mainly based on a dynamic process of constantly making architectural study models in various scales ranging from 1:50 to 1:2500 (Figure 3).

Fourth grade students made several models of their designs respectively in the following scales: 1/2500, 1/1000 and 1/200; design decisions are continuously revised in different scales as the process is being developed.

Third grade students began their study by building a partial model of the train station in 1/50 scale. Since the main topic of the project was to design a tension membrane structure covering the whole platform of Koshien Station, design principles of membrane structures were
explained by the experts in a learning-by-doing approach, having students experience the process on their own models.

Based on the experiment in which the progress of architectural students in a traditional studio was compared to the digital studio (computer aided architectural design—CAAD), Bermudez (1997) claimed that progress of students in CAAD studio were found more successful in generating various solutions. However, in architectural design studios of Japan, making scale models are still the most effective and instant way of design developing method, in spite of the advances in CAAD applications.

Formal and informal (non-curricular) activities
The regular field trips are organized as an integral part of the curriculum for architectural students every Saturday in accordance with the concepts that they are studying in their studio classes (see Figure 4). Each field trip focuses on particular themes not necessarily directly related to the project topic.

It is often pointed out that architectural education should not be bordered to the classroom walls and the days of the school year. Pinhero (2009) reiterate this in a slightly different way when he concludes his article by claiming that architectural education should not be limited to the school curriculum. The importance of these kinds of informal activities has partly been discussed by several academicians in Turkey (Inceoglu, 1994; Gorgulu, 1994) but never thought as important to be an integral part of the formal curriculum and has remained as just ‘non-curricular’ activity that are realized by the efforts of volunteered instructors and students. Special emphasis is given to these fieldtrips at MWU as it can be understood from their curriculum in which fieldtrips are shown in the formal academic program (see Table 2).

The field trips cover variety of places such as buildings for technical purposes and construction sites; places of historical, cultural and religious significance. With these fieldworks, students
are intended to improve their understanding and perception of the built environment and architectural heritage (Figures 5 and 6).

**Final juries**

It is certain that the most important activity and the most instructive part of the studio courses is the ‘final jury,’ which are performed three times in a term as a final activity held at the end of each project topic. Attendance of visiting jury members from a variety of fields such as famous architects, senior managers of construction companies, representatives of local administration and technical experts are provided. The allotted time for each presentation is about fifteen minutes, which includes approximately five minutes for questions.

Another significant observation in regards to the jury is the presentation room that is specially designed for this usage. This room has a full range of audio-visual equipment and movable panels on which students hang their drawings. Image of architectural models are projected on a screen, so everybody in the room can easily observe the model from the same vintage point. Besides, using microphone by students and jury members to deliver speech and critique allow students to follow the jury from anywhere in the room (see Figure 7).
Contributions of International Exchange Programs to Design Education

In chapter three contributions of international exchange programs to design education will be discussed in terms of two different approaches.

The Role of International Exchange Programs on Developing Design Education

The most easily recognizable effect of international cooperation in programs of exchange is that it leads to exchange of information, ideas, experiences about methods used in national educational traditions in design.

Also, as Wolfe wrote in 2002, those activities have “paradoxical consequences of globalization that also cause the process of innovation, creativity and social learning that are critical for success in the new era” (Wolfe, 2002). Kahvecioglu (2007) affirms this view when he claims that ‘Experiences like this are a kind of a shock therapy that can change the students’ views forever – which is the basic, if sometimes forgotten, purpose of all education’.

International activities allow instructors to observe, compare and contrast their teaching attitudes, methods of education and the performance of their students with that of students in other countries. Experiences like this will help instructors and administrators of the university to improve their education system.

Regarding students’ benefits from these activities, the students get an opportunity to experience unfamiliar—different way of design approach in architectural design studios in which they participated or which they observed while they were studying.

The Role of International Exchange Programs on Tradition, Identity and Values

Another important expectation of the ICSA Exchange Program for the students was to create self-awareness about own tradition, identity and values.

The importance of valuing and respecting human diversity is gaining recognition in all parts of life including architecture as can be understood from the NAAB criteria term-13: “Human Diversity: Understanding of the diverse needs, values, behavioral norms, physical ability, and social and spatial patterns that characterize different cultures and individuals and the implication of this diversity for the societal roles and responsibilities of architects” (NAAB, 1998).

International exchange programs are the most effective ways of dealing with the problematic approaches such as universal design ‘that advocates products and environments that accommodate all people, regardless of their abilities’ (Steinfeld et al, 1995).

The role of these concepts—namely tradition, identity and values—in architectural education has been discussed in various papers, for instance see the book named as ‘Architectural Education Today, Cross-Cultural Perspectives (Salama et al., 2002). What has not yet been discussed at length is the role of international activities in increasing students’ sensitivity to their own and others’ socio-cultural backgrounds and contexts.

These programs and their contents should be well organized and integrated to the architectural design studio. Students participating in these international activities inevitably observe differentiating approaches of their own from the others. In other words, this process led to the
awareness of their own unique characteristics such as culture, identity and tradition. Thus, we believe that the weight of international activities especially in the architectural design education should be increased. Besides, it is also necessary to consider how to relate these activities with the formal curriculum.

**Conclusion**

The conclusion of the study can be summarized as follows: In comparing design studio education of MWU with that of architectural schools in Turkey, in light of the observations presented in this paper, we suggest that criticism is not treated as a mere approach in the architectural design studio of MWU; besides, the emphasis is placed on the design process rather than on the final design product.

It is very satisfying that students, who used to take design studio course during fourteen weeks in Turkey, could discipline themselves to create unique design proposals within a very

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*Figure 7: Final jury involving Japanese and Turkish students (Source: Authors).*
short period of time—seven weeks in total—in completely new conditions. It is our observation that getting students involved in the above mentioned activities such as fieldworks, lectures and seminars by the experts helped them to grasp the design problem and develop several conceptual proposals in a relatively short period of time. Moreover, experiencing the design process in the light of cross-cultural interactions is the main impetus that motivated students to keep up with the course assignments and deadlines.

By having students study three different design topics for each term, it is expected to develop students’ conceptual thinking ability by experiencing as much different design topics as possible.

Students are not assigned to a group or a tutor in the design studio. Thus, they may get critique and comment of different instructors in the same class hours. This method of architectural studio instruction is likely to decrease the negative effects of master-apprentice (one-way) relationship that we have criticized in previous chapters.

It is certain that in order for international exchange programs to be more effective in the development of architectural design education, that the methods, roles and goals of those activities must be widely disseminated, discussed and implemented.

International cooperation in programs of exchange will not only lead to exchange of information, ideas, experiences about methods used in national educational traditions in design, but it will also lead to provide an opportunity for students to develop an understanding of acknowledging local-traditional values and cultural issues in different countries.

As a conclusion we believe that, after finishing this international exchange program (ICSA), the architectural students gained invaluable intercultural experience that helps them develop more flexible design approach and increased sensitivity to cultural values and perceptions.

References


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