Pedagogical Implication for International Cooperation in Architectural Design Studio

Abstract:

International cooperation in architectural design studio is an important topic which addresses many issues facing educators today, especially in terms of an increasing international practice and exploring the advances in communication technology. Architecture has transformed in a professional field which the universal concepts like sustainability is the main focus point while designing. In order to give consciousness to the students becoming “world citizens” and to design with “universal values”, educators must create alternative educational circumstance to increase their students’ vision of their role in this profession.

In this article, a specific teaching methodology which supports the international cooperation issue in the design studio is presented as teaching/learning experience. SAIT Polytechnic Architectural Technologies in Calgary-Canada and Selçuk University Department of Architecture in Konya- Turkey carried out a pilot project in international cooperation.

Keywords: architectural education, communication tools, design collaboration
Introduction

International cooperation in architectural design studio is an important topic which addresses many issues facing educators today, especially in terms of an increasing international practice and exploring the advances in communication technology. Today, architectural offices are multi-disciplinary and designs are made for different geographic locations in the world (Erdener & Chang, 2009). Participants in this profession are from all parts of the world and come together to complete these designs, either in person to person contact, or via the internet. Architecture has evolved into a multi-disciplinary and international business by means of the development of the internet (Zimring and al, 2001). Coupled with the international nature of architecture is the universal concept of sustainability which has become a primary design focus in this profession. In order to give consciousness to students becoming “world citizens” and to design with “universal values”, educators must create alternative educational circumstances to increase their students’ vision of their role in this profession. Unesco/UIA Charter for architectural education encourages mobility of educators and students between different countries calls for mutual recognition or validation of individual degrees, diplomas, certificates and other evidence of formal qualification. Tutors should get the responsibility of creating alternative educational circumstance with individual efforts for enlarging the vision. Collaboration is a form of interactive activity that individual participants share information and organise design tasks and resources (Chiu, 2002). Collaborative process is characterised by rapid change where ill-defined problems require team members to share expertise, understand design constraints from various perspectives, and develop relevant design solutions (Young-Pug, 2005; Seitamaa-Hakkakainen et al. 2004; Simoff & Maher, 2000; Sopensky,1994; Lahti et al. 2004). Mitchell and Zigurs (2009) found that collaborative design process can enhance emotional values such as trust-building, integrity, competence, empathy, and openness through quality of interactions and communications by using various artefacts and communication mediums. This article is about a specific teaching methodology which supports the international cooperation issue in the design studio as teaching/learning experience. SAIT Polytechnic Architectural Technologies and Selçuk University Department of Architecture carried out a project in international cooperation. Students from Canada and Turkey worked together to solve the design problem of sustainable housing in Canadian’s East Village. This studio was based on two main concepts: experience architectural design in an international context and address issues of sustainability with students from another country.
This international collaboration is the second step of the study that was published at JADE (Bala 2010). In this previously published study, students from Selçuk University designed housing in two different locations, Konya and Izmir within Turkey. The goal was to see how the regional and climatic differences of the two regions would affect the students’ design decisions. This set the foundation for something bigger: “What if we used this idea as a template and bring this to an international level... How would the cultural and climatic conditions of the two countries, Canada and Turkey affect the design decisions of students from these two countries?”. The contribution of this study is to introduce a new educational circumstance which would enhance existing educational models. This new model considers each institute’s existing educational system and is also more reflective of the process by which most of today’s buildings are created and delivered. This added value approach ensured that students understood the problems at hand prior to teaching these concepts to their out of country counterparts. In this case, students became both teachers and learners. This process also highlights the similarities and differences which architecture students experience regardless of the country or institute that they are affiliated with. More importantly, this process allowed, for the first time in most cases, the expansion of each student’s international network of professionals. It is hoped that this will carry on into their post-educational professional lives.

Other important contribution of this study to the architectural education system is to remind the educators to prepare opportunities to the students to become “world citizen” and to produce design with “universal value”. Behind the sharing this study, there is an expectation for new educational cooperation.

**Sustainability In The Architectural Design Studio; East Village Project In Calgary/Canada**

SAIT Polytechic and SELÇUK University Architecture Department created a common studio. The second year students from SAIT Polytechic Architectural Technologies and Stüdyo 3, Stüdyo 5 students from Architectural Department at Selçuk shared the same design problem. The project was to create multi-use housing/commercial buildings in Calgary’s East Village.

The East Village was the first settlement within what is now Calgary. Over the years, the Central Business District shifted to the west and the East village began it’s slow decline
until the City of Calgary spearheaded a new initiative to redevelop 48.5 hectares of the East Village into a modern sustainable and liveable community in the heart of the city. Calgary Land Municipal Corporation (CMLC) prepared an Area Redevelopment Plan (ARP) for the East Village. Not only documentations, drawings, texts but also short films were shared with the students. Students were given various building lots in the East Village (Figure 1).

FIG1. Students were given various building lots in the East Village Area Redevelopment Plan (ARP) prepared by City Council (produced by www.Calgarymle.ca Developers of the East village (corporation owned by City of Calgary)

Each lot has different building regulation rules according to the master plan. The ARP contains defined shade and shadow analysis for each building block, ratio of commercial to residential, desired density targets as well as more general social, economic and cultural design inputs according to sustainable building criteria. Students had to study

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1 For the detail http://www.experience.com and www.Calgarymle.ca Developers of the East village (corporation owned by City of Calgary),
www.Calgarymle.ca/rivers_projects/east_village/about_east_village/east_village_video/
the existing Area Redevelopment Plan in order to fully understand the requirements for their building lots. Tutors provided additional necessary documents and information for the Project (Figure 2).

![Diagram of Area Redevelopment Plan](image1)

The example of ARP 2010 design guide as: building regulation of ground level

The example of ARP 2010 design guide as: building regulation of heights along river

The example of ARP 2010 design guide as: building regulation of shaded analysis

FIG 2: East Village Area Redevelopment Plan (ARP) Building regulations examples according to sustainability criteria (produced by [www.Calgarymic.ca](http://www.Calgarymic.ca)) Developers of the East village (corporation owned by City of Calgary)

**The Studio Process: How The Studio Set Up?**

Information and communication technology (ICT) enables teachers and students to interact and work together without or less time and location constraints in design education (Sagun & Goktepe, 2001; Park & Son, 2011; Knox & Taylor, 2005). ICT offers new possibilities for design education and practice, particularly for collaboration in design education (Kalay, 2006).

The first step of this collaboration was to introduce the Canadian and Turkish students to one another. We used the same social network tools that students around the world are familiar with: SKYPE and Facebook (Figure 3).
FIG 3: The studio was carried out in the virtual environment not only sharing design products but also held meeting.

After rather formal introductions on SKYPE with students and tutors, the students from both countries then connected with each other on Facebook. They immediately started to exchange information about their favourite buildings, favourite architects, relevant architectural articles, interesting YouTube videos and personal information. In short, they were getting to know each other outside of a formal environment. More importantly, all students realized that even though they were from different parts of the world, from different cultures, spoke different languages, they did indeed find common ground and a common language. Architecture (Figure 4).

FIG 4: The studio CreateDifference-Sustainability in facebook sharing.
The Studio was carried out in the virtual environment for a two month period. Studio tutors carried out the regular studio program in their own countries with the shared design project, common presentations and requirements as well as monitor the interaction in the shared virtual environment. Canadian students sent short movies, detailed photographs and information about the project site, Cad drawings, land by-law information and of course discussions about how people live day to day in Canada despite the time zone difference of nine hours between two country. The sharing of information and documents in the two home studios became a 24/7 learning environment. Two different student groups from two distant and distinct parts of the world with inarguable language, culture and context differences had become inseparable parts of each other’s daily life.

**Education Method In East Village-Calgary Project**

The studios in SELÇUK University and SAIT in were set up as a microcosm of an international architecture work environment. It has been defined as an alternative learning/teaching method through the sharing of mutual knowledge and skills by students from two different countries on the design of sustainable housing (Table 1).

<table>
<thead>
<tr>
<th>STUDIO ORGANIZATION</th>
<th>DESIGNING STAGE</th>
<th>EVALUATION STAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>BASIS OF THE IDEA OF COOPERATION</strong></td>
<td>WARMING-UP PERIOD TO THE PROJECT</td>
<td>FIRST PHASE</td>
</tr>
<tr>
<td></td>
<td>EAST VILLAGE-Calgary</td>
<td>SECOND PHASE</td>
</tr>
<tr>
<td>From the example of Izmir-Turkey to the example of Calgary-Canada</td>
<td>Organizational cooperation environment Meeting through</td>
<td>Evaluations and analysis of design data for sites T1-T2-T3</td>
</tr>
<tr>
<td></td>
<td>Identifi cation of the site context from the master plan</td>
<td>Examination of suggestions together with Canadian students</td>
</tr>
<tr>
<td></td>
<td>Exhibition of projects in Calgary and Konya</td>
<td>Developing an education environment alternative to a routine education environment by individual</td>
</tr>
</tbody>
</table>

Table 1. Learning/teaching method followed in the studio
<table>
<thead>
<tr>
<th>Online e-mail correspondences</th>
<th>Facebook group and Skype</th>
<th>Online.</th>
<th>assertions.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Presentation of the idea as a declaration in the symposium</td>
<td>Analyzing the differences and similarities between Calgary-Canada and Konya-Turkey</td>
<td>Review of density data, wind direction, shading analyses and design guides</td>
<td>Preliminary design suggestions made sticking to the function, master plan and design guides</td>
</tr>
<tr>
<td>Getting opinions and suggestions from participating architecture departments</td>
<td></td>
<td></td>
<td>Presentations of projects by Canadian and Turkish teams to one another</td>
</tr>
<tr>
<td>SKYPE meetings</td>
<td>Preparation of collected data as the poster</td>
<td>Analyses in Macro scale 1/1000</td>
<td>Arrival of the Canadian team in Canada and mutual presentation of projects</td>
</tr>
</tbody>
</table>

The organization and coordination of the studios in both countries was key in determining the success of the design and evaluative processes of this alternative learning/teaching method. Defining the design problem and starting the design process was labour intensive and required instructors to think outside of the traditional
architectural education system box, yet also conforming to it in order to hit the required course outcome targets for the established courses. This project was tailored to fit within the context of existing courses at SELÇUK University and SAIT Polytechnic. Adaptation of institutions, instructors and students to alternative working environments is dependent upon their vision, their design culture, communication culture and cooperation culture. SELÇUK University Department of Architecture is in the process of development in terms of forming alternative educational environments and adaptation to innovations. The SAIT team works in a more flexible and cooperative culture and could also benefit from previous successes in cooperative studies in Australia and Guatemala.

It is safe to say that the master plan notes and design guidelines provided to SELÇUK team by SAIT from the Calgary Municipal Land Corporation contained the necessary drawings and information required to start the design. Design and legal guidelines prepared in accordance with sustainability principles were also painstaking examined and thus inspired the students and instructors for later studies in technical and expressional terms. In a proactive move on the part of the Turkish tutors, the Turkish students were requested to obtain the necessary information containing physical, cultural and spatial details on Calgary from their Canadian counterparts in order to have them initiate and lead the process. In discussions carried out in the studio, a table was prepared to show the similarities and differences between Konya-Calgary and SELÇUK-SAIT (Table 2).

<table>
<thead>
<tr>
<th>Location</th>
<th>Calgary- SAIT Polytechnic Architectural Technologies YY</th>
<th>Konya- SELÇUK UNIVERSITY Department of Architecture-XX</th>
</tr>
</thead>
<tbody>
<tr>
<td>Location</td>
<td>Y, Alberta YY</td>
<td>X-Central Anatolia</td>
</tr>
<tr>
<td>Population</td>
<td>1 milyon</td>
<td>2 milyon 13 bin</td>
</tr>
<tr>
<td>The amount of internal revenue per</td>
<td>74.825 dolar (126903 TL)</td>
<td>13.038 dolar (22125 TL)</td>
</tr>
<tr>
<td>The student number of the institute</td>
<td>25 000</td>
<td>80 000</td>
</tr>
<tr>
<td>Number of the students in architectural department in 2010-2011</td>
<td>300</td>
<td>400</td>
</tr>
<tr>
<td>---------------------------------------------------------------</td>
<td>-----</td>
<td>-----</td>
</tr>
<tr>
<td>Climate properties of the city</td>
<td>elevation is approximately 1,048 m. Hard winters in the zone the Rocky Mountains</td>
<td>Yazlar kurak ve sıcak Kışlar soğuk Kara iklimi</td>
</tr>
<tr>
<td>Properties of climate</td>
<td>Y experiences a dry continental climate</td>
<td>Dry Summer Cold and Snowy Winter</td>
</tr>
<tr>
<td>Northern latitude-longitude Eastern latitude-longitude</td>
<td>Y AP 51° 6’ N 114° 1’ W</td>
<td>36° 41’- 39° 16’ 31° 14’- 34° 26’</td>
</tr>
<tr>
<td>Average temperature in summer Average temperature in winter</td>
<td>a January daily average of -9 °C to a July daily average of 16 °C. Winter temperatures can be down to -35 °C. Summers highs to 30 °C</td>
<td>23 °C 0 °C</td>
</tr>
<tr>
<td>Direction of effective wind</td>
<td>Northwest. Chinook winds can raise the temperature by up to 15 °C in a matter of hours in the winter season</td>
<td>North west</td>
</tr>
<tr>
<td>Rainfall</td>
<td>With an average relative humidity of 55% in the winter and 45% in the summer, Y has a dry climate. Annual Rainfall: 320.6, Average Snowfall 126.7, 7126.7136126.7 126.7</td>
<td>%72 in winter and spring</td>
</tr>
<tr>
<td>Flora</td>
<td>USDA Plant Hardiness Zone 3a Numerous plant and animal species are found within and around Y. The Rocky Mountain Douglas-fir (Pseudotsuga menziesii var. glauca) comes near the northern limit of its range at Y northern conifer of widespread distribution found in the Y area is White Spruce (Picea glauca).</td>
<td>Acorn is popular. Everygreen trees should be planted in the northeast-southwest erection and deciduous trees should be used near the residents</td>
</tr>
</tbody>
</table>
Housing area selection regarding climate

South facing slopes are favorable to maximize sun heat. Protection from NW winds. Foundations must always be built below the frost line (1.2 meters below grade)

Slopes facing south and southeast are selected in order to benefit the most from the sun. It is important to be protected from the effects of the wind.

First Phase; How was the research gathered?

FIG 5. East Village Area Redevelopment Plan (ARP) Building regulations building height and distance from River Bow (produced by www.Canadamlc.ca) Developers of the East village (corporation owned by City of Canada)

The East Village master plan includes three distinct districts which prescribes criteria based on proximity to the Bow River. Criteria such as density, altitude, ground area is determined by the ARP. The criteria changes depending on the location of the building site within the East Village. TURKISH students worked in one district, The River Walk and used the T1-T2-T3 building lots. TURKISH students are accustomed to fixed zoning plans for specific regions such as precedent data, story height, and haulage distance. Whereas,
precedent data, story height and even haulage distances were determined within the range value in this master plan. For instance, the building height starts at 12 meters in a site that is close to the river and in a farther point of another site; it can go up to 40 meters, though it is in the same region (Figure 5).
Comprehension of zoning rules for East Village and the selected site was a very difficult and time consuming period for both students and instructors on the Turkish team. Preliminary design concepts were created based on function, given master plan and design guidelines.

Second Phase; What was the final results of the student projects?

Turkish design concepts in the second phase of the studio were examined and discussed online with Canadian students and scaled project drawings and models were developed. The following are the project analyses created by two Turkish and Canadian student teams. These projects were then shared amongst the Canadian and Turkish students (Figure 6)
The first critical presentations for the projects created throughout the studio were exhibited in the respective Turkish and Canadian design studios. As the academic semester of SAIT ends earlier than in SELCUK, so the projects which were in the development stages were submitted online to the Canadian instructor. The projects were printed, mounted and jointly exhibited at SAIT’s end-of-term exhibition. In May, Canadian students who by now had completed their final projects, travelled to Konya in order to participate in the jury with Turkish students and well as assist the Turkish students with their final presentations which would be due 6 weeks later. Students from both countries printed out their work and arranged their joint projects in the exhibition hall at Selçuk University Faculty of Engineering-Architecture (Figure 7).

In the jury, Turkish and Canadian students teamed up to present their work to the larger group, thus again reinforcing the concept of student as both teacher and learner. This process also enabled students from both countries to learn more about the specific individual aspects of their counterparts’ projects. From a practical perspective, this process also helped to bridge Turkish-English language gaps and allowed students to concentrate on the common language of Architecture. The additional critiques and discussions which occurred during this time also enabled the Turkish students to continue with their designs with an added layer of information from Canadian students and well as input from their Turkish and Canadian instructors. This cross pollination of information was rich, diverse and multi layered. An additional added value to this evaluation process was also the exchange of information, ideas, procedures and teaching methods of the tutors from both institutes. Many hours were spent discussing what works in a studio regardless of location, how can we improve our teaching methods, what can tutors learn from one another etc. This exchange of ideas continues long after the face to face exchange.
Discussion

There are certain conclusions to the experience of teaching/learning in international cooperation of architectural design education which may be generalized as a guide or
template for future collaborative work. The conclusions have advantages and challenges and advantages to the educational outputs as follows:

Challenges;
1-Starting and finishing the design using the data in virtual platform can reduce the quality of design and the efficiency of time management. It is important at this stage of students’ design abilities and language skills for there to also be face to face contacts with participating colleagues.
2-It is challenging for students to try to understand a site on the other side of the world which they have never seen or do not know the culture of only by means of digital communication.
3-Reading, evaluating and interpreting the zoning and master plan details may lose their validity if one does not have the language and cultural skills to decipher such specialized documents. Tutors must be actively engaged to help this process along
4-Using the videos, design parameters specified in the master plan, photographs and analyses of their student partners as mentors may cause uncertainties from time to time.
5-The challenges which students face in the performance, comprehension and speech in a studio organized in a foreign language can slow down the process. It is important to make sure that these students are understood. Lack of communication does not mean lack of knowledge. Many Turkish students would start by saying 'My English is not very good'. Canadian students would respond by saying “Your English is better than my Turkish”.
6-Starting the international studio under institutes' different academic calendars can pose certain challenges with regards to deadlines and delivery of critical information at key periods.

Advantages,
1-It is possible to create motivating alternative educational experiences in conventional architectural educational environments. Such initiatives are not a mainstay of most institutes but rather the fruition of certain individuals in each institute who have the wherewithal and passion to see this through. This requires the will of the participating institutes to allow this to happen, and the willingness of instructors to persevere.
2-Alternative teaching methods and methodologies forces everyone (institutes, instructors, students) outside of their comfort zones. Creativity is usually the result of
this. ICT on design learning and practice as changing from command and control to coordination of communication.

3- Students of architecture leave the studio with a wider vision of being a “citizen of the world” and “creating a design by universal values” which they were not previously aware of. Turkish students in the middle of Anatolia were given the motivation towards being a “citizen of the world” and creating a design by universal values, which they were not previously aware of. Canadian students have widened their vision by getting to know a geography and culture the existence of which they were previously unaware of. The horizons of both groups had been expanded.

4- The awareness for the similar architectural design problems in the essence of different cultures, different religions, different climates and different geographies was raised. The more they got to know each other through their work, the more they realized that they have a lot in common. We began this process with preconceptions of how different we are. We end this process realizing that we are all the same. We have the same dreams, ideas and notions of a better world.

5- The students have had the chance to both learn from one another as well as to teach one another. In other words, they experience the state of being both the learner and the teacher at the same time.

6- This cooperation has provided the students and instructors of both countries with an opportunity to start setting up an international network with their colleagues. It is quite possible that this network will serve them both in their educational life and after graduation. It also gives students access to what other institutes provide on the subject of architecture instead of merely getting what their own institution provides.

7- The synergy created by such an intense experience will continue long after the study is complete.

8- Students have an increased self-confidence having completed an international project. With this motivation, they are more likely to step out of their comfort zones again when applying for jobs, entering competitions and excelling in their careers.

9- Participation of new participants was facilitated by sharing the outputs of cooperation in architectural education circles in SELÇUK. So this educational environment has

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become the means of getting acquainted with situations which may be faced in future projects to be carried out in international cooperation.

10- With the help of trips made to Cappadocia Catalhoyuk and the historical artefacts in the inner city of Turkey, the students got to know each other outside the academic environment and made future plans such as summer internships and partner trips.

11- On the last day of this study, the authors arranged an online meeting with SAIT Polytechnic and SELÇUK University officials in order to discuss the possibility of this being an ongoing sustainable project from year to year. The authors hope that this cooperation will continue through mutual visits to be made with the participation of students and instructors in the spring semester of every year. It is also hoped that TURKISH students will also be able to travel to SAIT to continue this work and add another dimension to this project.

12- Creating alternative learning environments within present architectural education systems results in significant added value to student’s education. Architectural problems solved in an international context are more in-depth and layered than the conventional process.

13- The authors of this study hope that this can serve as a template for future cooperation.

**Conclusion**

The features of collaboration in design education include effective communication, reflection, appropriate tools, and the effective use of artefacts. Information and communication technologies present online applications for collaboration design that offer educators the possibility to change design pedagogy. Creating alternative environments for architecture education in the present system brings about a vast amount of unpredictable architectural, cultural and universal plus value. It is possible to assert that architectural problems solved in an international context are more in-depth and layered than the conventional process.
Acknowledgments

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References:


