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## **Disciplinary/ Interdisciplinary Virtual Design Studio**

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**Key words:** *Virtual Design Studio, Architecture, Education*

### **Abstract:**

*The purpose of initiating Virtual Architectural Design Studio is the provision of a highly interactive studio environment independent of time and place by broadening the horizons of today's Turkish traditional architectural design studios through collaborations among universities thanks to European Credit Transfer System\_ ECTS credit system. The method developed in virtual design studio (SMTS in Turkish/VDS in English) can be considered a sample for future virtual design studios and disciplinary/interdisciplinary interactions. It may also provide an opportunity for students and instructors to make use of the infrastructures learned and developed during the application as well as to widen their uses in future.*

## **1 Introduction**

Countries and continents are getting closer because of globalization and good opportunities on ICT. Global studios or courses and global internship for architectural education are very attractive tools for cooperative studies. In November 2006, There was an international forum (Architectural Education Forum III: "Global Architectural Education Area?", Istanbul) that was pointed out the recent developments and opportunities of architectural education such as Mobility, Quality, Cooperative Studies, Global Studios, Global Courses, Global Internship. Regarding to this, exchange of students, academic personal, researchers and professionals all over the world can easily be realized in the third millennium. The Forum III emphasised that The European Higher Education Area and European Research Area was established after Bologna, and many important cooperative studies were realized in this process. ECTS in Europe is very systematic mobility tool for students. The mobility supporting programs like Erasmus, Socrates, Leonardo and agreements between schools are very helpful for students exchange not only in Europe but also in other continents. Regarding to the collaborative studies in architectural education, virtual courses/workshops, virtual studios, virtual design critics and virtual conferences contribute to the globalization and interactive computer aided learning.

Virtual studio refer to "networked facilities that provide participants with access to the virtual organization's databases and computational resources, messaging and data exchange, and video conferencing, in a highly integrating fashion"[1]. Today, it will be necessary for architects to perform their vocational skills easily in virtual environments. Among those skills are an interactive/ a synchronous designing, drawing, modeling, an interactive/ a synchronous presentations, making a critique of their designs together with third parties (instructors, other students, users and interdisciplinary professionals such as engineers, artists etc.) and monitoring the construction process etc. as well as an asynchronous works.

## 2 Virtual Design Studio\_VDS/SMTS in Anadolu University

### 2.1 VDS/SMTS2006 & SMTS2007

Virtual Architectural Design Studio as an virtual environment will be an important step towards more effective architecture education in Turkey based on the changes and improvements in the world of architecture both in national and international contexts. Accompanied with the experience of Istanbul Technical University, Suleyman Demirel University, Yildiz Technical University and as an interdisciplinary experience with the Fine Art Faculty of Anadolu University, this project will be an outstanding opportunity to integrate distance education to the field of architecture as well. The aim of this paper is to introduce the development process of the creative studio in terms of hardware, software and environment thanks to recent technological developments. The information to be presented here is based on the experience gained from the course SMTS2006 Virtual Architectural Design Studio carried out during 2005-2006 spring term with a total of 14 groups and SMTS2007 in 2006-2007 spring term with a total of 3-6 groups. In March 2006, the main virtual studio in the faculty is completed as an hardware and In June 2006, the softwares are completed to set up for the computers in the studio. This studio could be connected to seven points.

In order to realize this project, the course “Participatory Methods in Architecture” was carried out in virtual environment in the Department of Architecture of Anadolu University for the first time in 2005-2006 spring term. In the first phase, students were given theoretical information about information technologies and their uses as well as information about certain basic softwares such as Macromedia/Dreamweaver and Flash, Photoshop, Moviemaker, Sketch Up, Premier, CAD programs etc. Mixed project groups (Anadolu University - Istanbul Technical University - Fine ART Faculty) included one or two students from both universities. First of all each student prepared his/her own website, which gave him/her a chance to introduce his/her architectural identity to others and to gain experience in virtual environment. In the interdisciplinary team process, each member is encouraged to contribute, design and implement the group goals for the virtual project (Figure 1,2 and 3).



Figure 1. E-Design workshop between Faculty of Enginering and Architecture and Fine Art Faculty on May 8, 2007: figure shows the virtual studio (photographed by the author).



Figure 2. E-Design workshop: a synchronous design process (photographed by the author).



Figure 3. E-Design workshop: e-sketch by using interactive LCD screen (dual-touch, DViT\_Digital Vision Touch) with its electronic pen as a hardware and “imagination at work” as a software (photographed by the author).

The main titles in the course flow diagram are as follows [2] :

- Warm up and the formation of groups as well as the determination of the means of communication
- Providing information about the uses of information technologies, possibilities, advantages and applications of virtual design studios and up-to-date samples
- Instruction about softwares, in-class and out-of-class practice applications of softwares
- Instruction about graphical interface design\_GUI
- Application: student websites
- The determination of the design problem, its framework and the approach to be followed

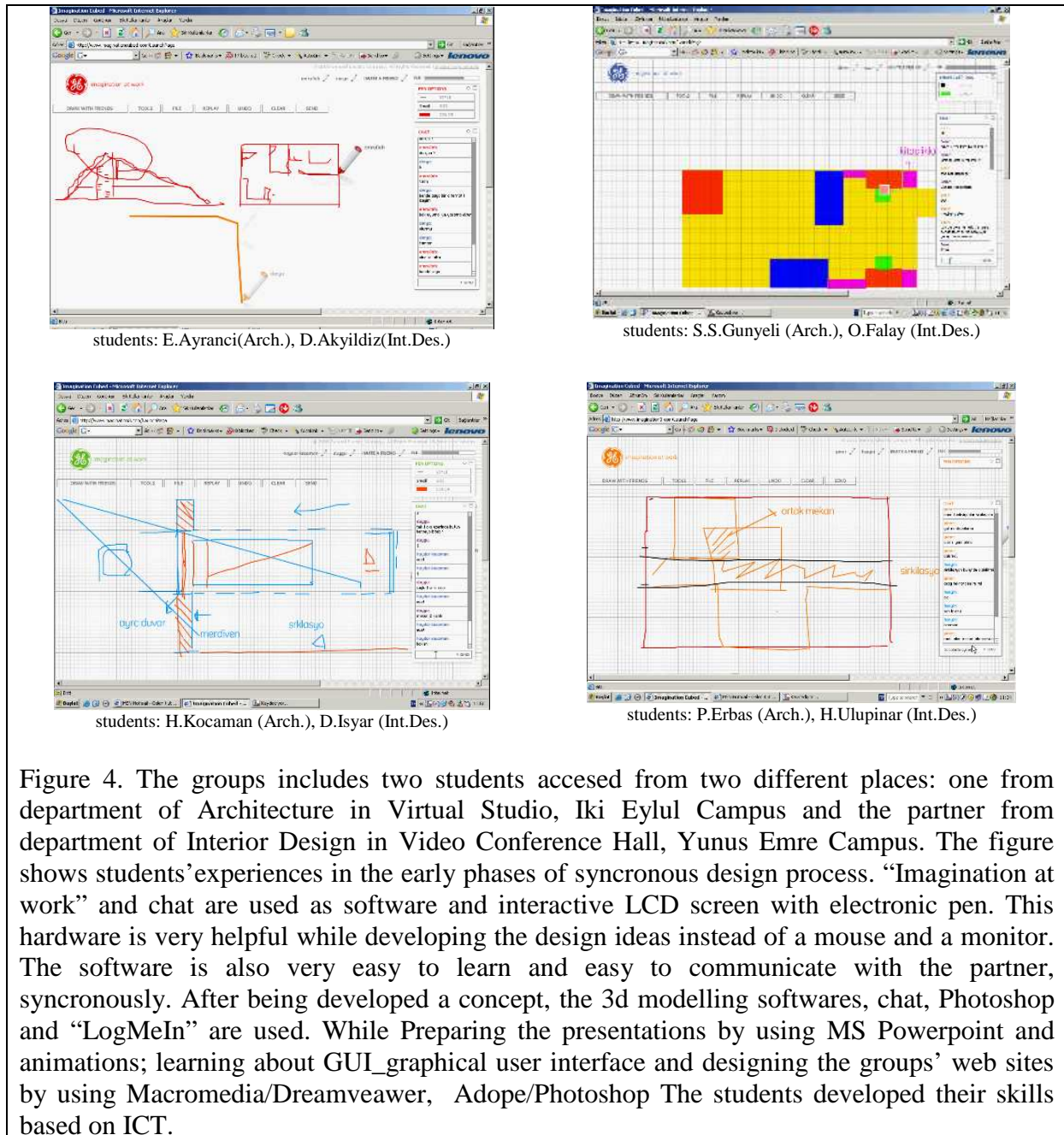
- The design problem: suggestion and design critics
- The design problem: presentations and publishing them on student websites
- Feedback session on the content of the course and the method used as well as the differences between virtual and traditional exhibitions

The method developed in virtual design studio (SMTS in Turkish/VDS in English) can be considered a sample for future virtual design studios and disciplinary/interdisciplinary interactions. It may also provide an opportunity for students and instructors to make use of the infrastructures learned and developed during the application as well as to widen their uses in future.

## **2.2 Observations from the Virtual Studios\_SMTS2006 and SMTS2007**

The necessity that design studios should not be isolated and should be open to social interaction was also mentioned by [3], [4],[5], [6]. In this point of view, virtual design studios in design education is highly interactive learning environments. Another importance of VDS is its up-to-date technology (software and hardware). Therefore the architecture students should learn/use new skills based on ICT. According to Piaget, “Knowledge is experience that is acquired through interaction with the world, people and things” [7]. In SMTS2006 and SMTS2007, our students have these experiences:

- Synchronous online discussions are being increasingly used in developing the design process. The first result of these discussions facilitate learning the virtual design environment for students and group interaction between on-campus and off-campus students. For example, The groups were found to initiate design process through chat sessions and preliminary sketches, “imagination at work”, whiteboards and modeling and regular transitions among these techniques.
- Although Using the Technology is encouraging students to learn virtual environments, Technological competence of the students is crucial for a smooth flow of the lesson. For instance, within the scope of SMTS2006 and SMTS2007 courses, students were given instruction about certain software, such as “Macromedia-Dreamweaver” to prepare webpage’s; “Moviemaker”, “Adobe Photoshop” to create certain effects; and “Imagination At Work”, “Whiteboard” to enable communication and an e-conference on shape grammar to create design ideas and e-workshop as an interdisciplinary collaboration on the early phases of creative design process. But today some software could have already known by some students.
- The students are able to conduct joint studies with the students in different places.
- Learning to express their architectural identity by their own web sites encourages the students to present group projects and to develop the quality of design.
- The students are more creative and productive in a synchronous design process because of interactive learning environment and interdisciplinary collaboration (figure 4).



There are also some problems faced in the virtual studio. For example, Since the academic calendars of both universities were not parallel in terms of set dates, it was necessary to make revisions, even reorganizations, on the common processes, such as, starting and finishing dates of the courses. The other problem is the firewalls of both universities. This problem is solved when "LogMeIn" software used.

These experiences could contribute to strengthen the foundations of research and education. Finally, virtual design studio provides unisolated interactive studio as a learning environment for students and lectures. Therefore, the students stated that they find it enjoyable to have contacts with people outside the university and to have professional discussions with them, which are the examples of socialization.

### 3 Conclusion

Traditional design studios started to open to the world with virtual design studio. The opportunity of The Tripod: first\_ECTS\_European Credit Transfer System and second\_international exchange programs such as ERASMUS, SOCRATES and third\_collaboration such as VIRTUAL STUDIOS contributes the architecture programme. The national/international partnerships and also disciplinary /interdisciplinary partnerships of virtual studio provide a guiding light for the positive environment of the future. We believe that the interactive world of Virtual studio provides educators and students as active participants for keeping up the global quality of design education in an international academic and professional network.

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