

**AN EXPERIENTIAL LEARNING JOURNEY: BASIC
DESIGN STUDIO**

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Abstract

Design studio has always been the major interest of design education research. In time, by the change of world through social, economical, psychological, technological developments, new trends have been brought up, new systems have been utilized, new terminologies and theories have been integrated in the curriculum of design education. Especially technological developments have a great effect on the structure of design studio as the formation of a new studio experience through CAD process, virtual studios etc. Despite these entire changes and developments design studio is still the core of the curriculum in design education and functions as a communication center for its participants through *reflection in action*.

Experiential Learning Theory describes learning as a continual cycle beginning with experience, continues with reflection followed by abstraction and later leads to action that becomes a concrete experience for reflection. Previous research indicates that, the learning process in the design studio setting is considered as a model for *Experiential Learning Theory (ELT)* of Kolb in which different phases of the design studio could reflect different modes of the learning cycle. Especially in Basic Design Studio the experience through a series of different learning activities is crucial since the preliminary aim is to develop the perceptual skills of design students through an analytical and abstract way of thinking for gaining a global common language as design. Moreover they are taught how to transfer this abstract conceptual idea to a concrete design product through some externalization methods. In the process of transferring the concept to a design, experimentation is one of the most important keywords for Basic Design Studio.

In this context, it is aimed to make an overview of the Basic Design studio process of the Department of Interior Architecture and Environmental Design at Bilkent University by figuring out the experiential process of learning through experiencing, reflecting, thinking, and doing in the different phases of the studio activity. Besides, in the scope of this study, the distribution of the basic design students in the learning style type grid of *Learning Styles Inventory (LSI)* will be figured out. Also the perception of basic

design students for different learning activities in the process will be evaluated according to the learning styles of the students.

Keywords: design education, basic design, experiential learning, learning styles, design studio.

Introduction

Although the understanding of the process of learning has been one of the main issues of educational research for the last decades, design education has rarely been the interest of these studies. Nevertheless, there are many different researches on design education and the studio process; only few of them focus on the effects of learning styles of design students within the design studio process (Demirbas and Demirkan, 2003, 2007; Kvan and Yunyan, 2005, Durling et al., 1996, Newland et al., 1987).

According to Kolb's (1984) *Experiential Learning Theory (ELT)* learning is defined as a continuous cycle that begins with experience, continues with reflection and leads to the action, and this becomes a concrete experience for reflection. Previous research showed that design studio process could be considered through *ELT* (Demirbas and Demirkan, 2003, 2007; Kvan and Yunyan, 2005). In this scope, this study aims to discuss the basic design studio process as a concrete model for *ELT*.

Basic Design Studio Process

Ruedi (1996) proposes that design serves as a mediator between invention (mental activity) and realization (social activity) in which as Verma (1997) states there is an open-ended process of problem solving through design theory that functions as an instrument theory supporting the cognitive abilities of the designer. For that reason more than facts and rules which could be taught by instruction, the extent of the experience of the design student is more important (Demirkan, 1998). Design studio is the first place that the candidate can get this first experience and extend it. Design studio could be considered as the most important part of design education since it is the core of the curriculum where all the other courses are related to it (Uluo•lu, 1990, 2000). The primary aim of the design studio is not just to teach how to design but to develop an understanding of what the design and design activity are, through a creative and analytical way of thinking. Uluoglu (2000:34) claims that design activity is more than an act of doing in which the

activities should be conscious, selective and intelligent rather than just being impulsive, habitual and coincidental. Design education could not be considered as the educational process of designing as an activity through the provision of the necessary technical skills, but primarily related to thought development, subjective development, finding out solutions for wicked problems, using reasoning models etc. (Chastain and Elliot, 2000; Verma, 1997).

Design students are expected to construct a basis for the rest of their design education process and even for their future professional careers through basic design. For that reason Basic Design Studio has an outstanding position among the other design studio courses. It is the first place that the design student will experience the processes that are discussed above. Basic design studio introduces totally a new world for the student with its own values and behaviors (Anthony, 1991). Within the basic design studio process, students are expected to develop their own set of values and attitudes which will last during their design education and even throughout the professional life (Farivarsadri, 1998).

Consequently, the educational experience in the basic design studio can be considered through three simultaneous and interrelated stages as; learn and practice some new skills, learn and practice a new language (Schon, 1984), and learn the way of thinking as Ledewits (1985:2) explains it referring “to a particular domain of problems and solutions that characterize, and are fundamental to, professional performance”. However, it is a hard work for a beginner student to start learning these stages immediately since s/he will face with difficulties in understanding what is said and/or expected by the design instructor. On the contrary it is also hard for the design instructor to communicate with someone who is unfamiliar with the process of designing (Schon, 1987). From an epistemological level, the organization of necessary knowledge and the ways of presenting this knowledge which will be accessible for every student is very important. In that sense basic design studio is concerned with various learning paradigms.

Schon (1987) discusses two ways of interaction in the studio as telling-listening and demonstrating-imitating. Both telling-listening and demonstrating-imitating actions are continuous and reciprocal between the design student and design instructor. Schon (1984, 1987) states this communication process as reflection-in-action which develops itself through a spiral way of action. The

student reflects on the action of the instructor and the instructor reflects on the action of the student consequently. Reflection-in-action formulates the general structure of design studio process in which understanding the learning process of design students is quite critical for educational improvement (Demirbas and Demirkan, 2003).

Experiential Learning Theory (ELT)

The processing of new information through an internal and mental approach that differs from individual to individual could be defined as learning. The way(s) of perceiving and processing new information could be stated as the learning styles of the individuals (Kolb and Kolb, 2005a, b).

ELT considers learning as a circular process that starts with experience, continues with reflection and conceptualization that leads to an action. In this circular model, there are four learning modes which formulate the cycle of learning (Smith and Kolb, 1996; Kolb, 1984). These are concrete experience (CE, learning by experiencing), reflective observation (RO, learning by reflecting), abstract conceptualization (AC, learning by thinking) and active experimentation (AE, learning by doing). Along this cycle, the four learning modes expose two bipolar dimensions that are concrete/abstract and active/reflective dimensions (Willcoxson and Prosser, 1996). According to *ELT*, concrete/abstract dimension refers to the perceiving of new information while active/reflective dimension refers to the processing of new information in learning activity. The combination of the tendency of learning either through experiencing (CE) or construction of theoretical frameworks (AC) with the tendency of learning through reflection (RO) or learning by doing (AE), shows the individual's common learning tendencies (Kolb, 1984). In the scope of *ELT*, an individual's learning style is figured out by identifying his/her position on each of the bipolar dimensions through the test called *Learning Styles Inventory (LSI)*.

The position of an individual on each of the bipolar dimensions corresponds to one of the four learning styles defined in the scope of *ELT*; namely, *accommodating*, *diverging*, *assimilating* and *converging*. *Accommodating* learners are generally fond of hands-on experience learning through doing things. They are more action-oriented and generally rely on others for information instead of their own analysis. *Diverging* learners prefer observing rather

than taking an action. They have the tendency of considering concrete situations from many different points of view but they are usually not fond of theories and generalizations. They usually like to generate a broad range of ideas such as brainstorming. *Assimilating* learners are more interested in abstract ideas and concepts rather than concrete experiences. Theory should have reasonable soundness instead of their practical value for *assimilating* learners. They prefer to experience concrete situations in a more symbolic way and the information is transformed through thought. *Converging* learners' tendency is dealing with things rather than others' experiences. They are best in finding practical applications of ideas and theories. They are fonder of technical duties instead of social and interpersonal issues. They have the ability of solving problems and making decisions over find out solutions of the problems. *Accommodating* versus *assimilating* learners and *diverging* versus *converging* learners have opposite learning strengths (Hsu, 1999; Kolb, 1999).

Case Study

In the scope of the previous discussion, the process of the Basic Design Studio of Interior Architecture and Environmental Design Department at Bilkent University was considered as a model for *ELT*. The syllabus of the course was revised in a way that all modes of *ELT* were aimed to be utilized either in different phases of a single exercise or through different successive exercises within the program. In this sense, together with traditional design problems, some other teaching and learning methods were integrated to the program as lectures, research assignments, site visits and observations, workshops etc. By this way together with learning by doing, it was also aimed to orient the students to experience, reflect and think on the assigned problems. Since one of the main criterions in Basic Design Studio was to develop an abstract way of perceiving the environments, all through the studio process, students were asked to study concrete issues/states first, then make an abstraction of these and finally through this abstraction process come up with concrete design products. In this process, students faced with different learning activities consequently that would help them to find out the solutions of

design problems from a wider perspective. In this context two different sets of the exercises that were handled will be discussed.

At the very beginning of the course before asking students to design anything, it was aimed to make them to be aware of the conceptual understanding of design by starting with the concept of “pattern”. The initial stage of this exercise was the realization of the concept through a site visit. After a brief description on the concept of pattern, students were asked to find out and photograph some natural patterns from their environment. Later they were asked to bring the photographed pattern examples to the studio for discussion. In this stage, students were asked to present their examples to their peers and a free discussion on each example was handled. Through the discussion phase they were asked to evaluate the examples according to the previous information on pattern that they had given. After this stage they were asked to work alone and try to figure out the common geometries from their pattern examples by putting a transparent paper and marking the geometries by pencil. In the next stage a detailed lecture was given on the concept of pattern and texture by giving natural and built environment examples. By the termination of the lecture they were again assigned to make the geometrical analysis of one of the selected pattern photographs by a tracing paper and pencil, but this time they were informed that they should have figured out the regular geometries out of the natural pattern example. After this analysis they were asked to imitate the pattern by copy and paste method on A4 format paper by using white paper for background and black thick paper for geometric shapes. In the next stage this time instead of imitating the existing they were asked to create a new pattern by using the same geometric shapes that they had figured out from the previous application. Following by a detailed lecture on the concept of “color”, this time, students were asked to repeat the previous exercise by color. During this process studio discussions were handled on each product and by the termination of the exercise students were asked to present all of the products of the exercise in a sequential order and a review was handled (Figure 1).



Figure 1. An example of “Pattern” exercises set.

Second exercise was again a two dimensional exercise but this time the size of the design field was enlarged and students were asked to organize the regular geometric in a way that they would be no longer just patterns but a representation of an organization. In the initial phase students were asked to work with black and white papers. After then a detailed lecture was given on the concept of “organization” and students were asked to repeat the previous stage again with the new information that they had acquired from the lecture. In the next stage, color was added and lastly they were asked to do the same organization with single color but this time adding up the depth factor by creating a relief version of their organization product. By this way both three dimensionality was introduced and they had the chance of experiencing two different perceptions of the same design product. Later as a complementary exercise students were asked to find out organization examples from built environment and abstract these examples by figuring out the regular geometries and create a unique new organization by the found out geometric shapes as a colored two dimensional work and a colorless relief work (Figure 2).

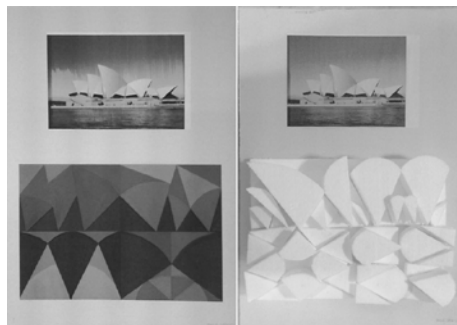


Figure 2. 2D and 3D organization studies from built environment examples.

The second selected exercise set to be presented in this study was from second semester in which human dimension, user factor, scale, proportion, structure and space in addition with the previous knowledge of design principals and methods were the subject of attention of the studio. In the first phase students were assigned to learn about their body dimensions by working in groups of two. While studying their body dimensions they were asked to draw the contours of their bodies in three different postures in full scale on brown drafts paper. Then they were asked to use any part of their body such as hand, foot, head etc. as a measuring unit. By this way they figured out their body dimensions by using their own

measurement unit (Figure 3). After this stage, students were asked to make research homework and prepare a presentation board on human dimension and privacy requirements. Besides they were also asked to experience and note different interaction distances between humans in different spaces such as in a queue of ATM machine, in bus etc. After this a detailed lecture was given on the concepts of “scale, proportion, human dimension and privacy dimension”. As the last stage of this exercise students were asked to construct a spatial skin for themselves in full scale that would be a visual representation of the invisible personal space bubble of them. This stage was handled in two steps, first they constructed a 1/5 scale model of the spatial skin and got feedback from the design instructors and then they constructed the spatial skin as a costume for themselves. The primary requirements of the project were that it should be appropriate to put on their bodies, they could easily move with their spatial skin on their bodies and it should represent their personal space. For the review phase students were asked put on their spatial skins, and go out the studio, walk around the faculty and interact with other people (Figure 4).



Figure 3. Analysis of body dimensions.



Figure 4. Review of “Spatial Skin Project”

At the end of the semester a survey was carried out by 60 volunteer freshman students from the basic design studio. They were asked about their satisfaction level and comments on the basic design process that they had just experienced. According to students’ comments it was figured out that although the process of the basic design studio was stated totally as a new experience for all of the students they did find the process satisfactory and useful for their learning preferences. They were asked to rate how adequate the basic design studio process was between 5 (totally adequate) to 1 (not at all). About 72% of the students claimed that the learning process in the basic design studio was adequate to their learning

preferences while 6% stated it was totally adequate and 11% mentioned that they were not sure about how adequate the process was according to their learning preferences and expectations. None of the students mentioned an inadequate situation.

Students were asked to evaluate this new learning process comparing with their previous education experiences as an open-ended question. Almost all of the participants mentioned that when comparing with their previous educational process, learning experience in the basic design studio was totally different and new for them. Although they felt difficulty during the semester, they found the process quite useful for learning. Students claimed that by the basic design studio process they have started to observe everything around them from a different and wider perspective. Basic design studio helped them to gain some new skills about problem solving, analyzing and conceptual way of thinking. All of the participant students mentioned that learning by doing is the most useful part of basic design studio. They have also mentioned that the process of analytical thinking and decision taking for the appropriate action till the activity of doing or experimenting was also a significant outcome of the basic design studio. Almost 50% of the students mentioned that after each basic design class, they were looking around to find out some examples of the things that they had learned in the studio. One of the students claimed that basic design studio was too much conceptual and abstract in the sense that it was sometimes difficult to relate the theory with application. All of the students claimed that although sometimes they were confuse with some exercises during the process termination of the process, they could easily relate each stage and exercise with each other as a continual and interrelated learning activity. One of the respondents had graduated from an electrical engineering program just before being a design student and his comment was quite interesting. He claimed that at the very beginning it was not acceptable for him to deal with a problem that had limitless solution opportunities after an engineering education in which the basic intention was to reach the constant and concrete answers. However through the semester he realized that this way of learning made him more flexible and creative while thinking of the answers of the problems and his analytical skills has been developed by the end of the semester. All of the participants agreed

that the educational process within the basic design studio enhanced their perception of environment.

Students were also asked to rate the methods of learning that they utilized during basic design studio. The results showed that the most widely used method was assigned as learning by doing ($M=2.85$ $SD=1.92$) and experimenting ($M=2.58$ $SD=1.80$) which was considered to be quite acceptable and valid when comparing with the answers of the open ended question.

The distribution of the participant students in the learning style type grid of Kolb (1999) was also figured out through *LSI* test. Interestingly, although the most widely used method of learning was found to be learning by doing in the other questionnaire, the results of the *LSI* test showed that most of the participants learning tendency was more towards the learning by reflecting instead of learning by doing in the process axis. As expected the general tendency in the perceive axis was found towards learning by thinking instead of learning by experiencing. According to the learning styles distribution of the students 43 students (71.7%) were assimilating, 10 students (16.7%) were diverging, 5 students (8.3%) were converging and only 2 (3.3%) were accommodators. This result was considered as reliable since the location of architectural specialization was found to be between abstract conceptualization and reflective observation as assimilating (Kolb, 2005). Moreover, previous research in design education also revealed that assimilating and converging learning styles were the dominant learning styles among the students (Kvan and Yunyan, 2005; Demirba• and Demirkan, 2003, 2007).

Conclusion

Although the limited number and a very constant profile of the participants averted from making further statistical analysis, the found out results were found to be quite sound and satisfactory. The general satisfaction levels of the students at the end of the process and their comments about the process could be considered as a valid result for the assumption of considering the basic design studio through *ELT*. Although the result that the most favored method is learning by doing while most of the students are assimilating learners (more utilizing learning by reflecting and thinking) seems a bit confusing, it does not show an inconsistency. *ELT* states that in a

hypothetical point of view, the learning activity will be most successful when all four modes of learning will be experienced equally. So, the primary aim is not fit the structure of the course according to the learning styles tendency of the student group but provide a learning environment which will be suitable for all learners with diverse learning strengths and weaknesses. In that sense the application in this study is found to be successful. To conclude it is believed that *ELT* is an appropriate model for basic design studio process that will provide opportunity for better teaching and learning situations in design education.

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