Online Journal of Art and Design
volume 10, issue 3, July 2022

Learning from Experience: Installation Art in Design Education

Işıl ÖZÇAM*
Assist. Prof. Dr., Mimar Sinan Fine Arts University, Department of Interior Architecture, Istanbul, Turkey
isil.ozcam@msgsu.edu.tr

Hande Zeynep KAYAN
Assist. Prof., Mimar Sinan Fine Arts University, Department of Interior Architecture, Istanbul, Turkey
hande.kayan@msgsu.edu.tr

**First author*

Abstract
This study considers installation as an experiential learning method that supports design education. Providing active interactions with the environment, enabling a connection between theory, practice and requiring a pre-design phase, installation correlates with design practice. Moreover, it not only provides the opportunity for students to freely express themselves but also contributes to the point of acquiring space with new dimensions. In current literature, installation is considered a branch of art; yet, there are no academic studies regarding its effects on educational outputs. Regarding this aspect, after a literature research about the topic, the study consisted of an installation workshop organized with interior design students, which was followed by the results of a related questionnaire. In this regard, the use of installation art in design education has been evaluated; leading subjects in the steps of idea production, reflection, practice and its potential contributions to students have been put under debate.
Keywords: Interior Architecture, Design, Education, Experiential Learning, Installation Art.

Introduction
Parallel to the improving technology and perception of the modern world, design education has undergone change; moreover, flexibility, conceptual thinking and creativity have become the necessary skills for students to gain. In this phase which develops with change, the question "How can we teach better?" has left its place to "How do people learn?"; learning has started to be considered as a mental process with cognitive and sensual dimensions. Parallel to this outstanding approach, today, learning methods that pave the way to interdisciplinary thinking, connection of theory and practice, and self expression at cognitive level started to be at the forefront. Contrary to traditional teaching methods, experiential learning is an applicatory learning model which enables the student to attend actively and discover himself, thus internalize the acquired information.

In this study, installation art is suggested as an experiential learning method in interior design education. In current literature, installation is considered as a branch of art; although its use is gradually increasing in design education, there is no systematic research about its effects on educational outcomes. However, installation can be used as an alternative method in interior design programs; it can provide students with one-to-one connection to their thoughts, to materials, provide active interactions with space and the environment, help students gain spatial perception while allowing them to reflect their ideas and approaches to design.

Parallel to this, a workshop was organised; at the end of it a questionnaire was made in order to understand the success of students in reflecting their ideas through installation; their skills in conducting the period; the subjects that they found challenging throughout the process; and the contributions of works on perception of the space. In addition, in terms of evaluating the results of the survey, the comments of the students who carried out the projects about the process and the observations of the researchers have been supportive. The purpose of this paper which can interest academicians, researchers and students working on creativity, is to analyze the use of installation in design education as a model through student experiences and to discuss its potential contributions to interior design education programs.

Learning from Experience

In the student-centered educational approach of the 21st century, the creative periods between interest and practice gain importance; moreover, there is increasing inclination towards unique methods that provide interdisciplinary information flow and flexible, experimental, problem solving and cognitive thinking skills that lead students for discoveries, teach individuality and self-expression. Today, it is accepted that learning is a mental phase with cognitive and sensual dimensions and that the individual is an active learner who conveys meaning through present mental models and new experiences and interprets them. Parallel to this approach, it has recently been observed that the experiential learning approach which provides transformation of theoretical knowledge of the student to practice has come to the forefront in schools of design (Düzgün Bekdaş & Yıldız, 2018; Yürekli & Yürekli, 2004). Experiential learning is defined as "the phase during which a student directly builds information, skills, and values from experience" by the Association of Experimental Education (Clemons, 2006).

In experiential learning, the individual accesses information through his own reality with discoveries and trials instead of hearing or reading others' experiences. As a consequence, the person is inclined to form new relations and make syntheses by means of reflection while contemplating on his past gains. Schön's theory of reflection is accepted by educators as a fundamental element of developing student learning (Donald A. Schön, 1983). Based on Dewey's (1910, 1916) studies, theory of reflection depends on the constructive point of view of human perception; according to this, the designer builds his view of the world on his experiences, beliefs and knowledge he gained in the past and reflects these on his designs. Articulating the concept of learning as an active process, Dewey (1938) has rejected the notion of traditional, structured, disciplined educational process and suggested that action maybe the most important part to the learning cycle because it closes the cycle by bringing the inside world of reflection and thought into contact with the outside world of experiences created by action. Kolb, who described a holistic learning process with experience at the center with "Experiential learning theory" by taking Dewey's studies one step further, defined learning as "the process whereby knowledge is created through the transformation of experience"; knowledge resulting from the combination of grasping and transforming experience "(D. A. Kolb, 1984, p. 41). The theory is based on the works of 20th century scientists, notably John Dewey, Kurt Lewin, Jean Piaget, William James, Carl Jung, Paulo Freire, and Carl Rogers, who gave the experience factor a central role in the theories of human learning and development.

'Experiential learning theory is a dynamic view of learning cycle driven by the resolution of the dual dialectics of action/reflection and experience/abstraction' (A. Y. Kolb & Kolb, 2009). The model depicts two dialectically-related cognitive experiences, concrete experience and abstract conceptualization as well as two modes of transforming experiences, reflective observation and active experiencing. Experiential learning is a knowledge-building process that involves creative tension between these four learning modes that respond to contextual demands. This action can be depicted as a learning

cycle based on experiencing, reflecting, thinking and acting in a recursive process that responds to the learner's learning situation and what has been learned and plays an important role in the development of creativity (A. Y. Kolb & Kolb, 2005). According to Ayob et al. (2012), who emphasized the relationship between experiential learning and creativity, if students were given the exposure through experiential activities, creativity and innovation skills can be developed.

Creativity is the ability to imagine something that is not there, to do something in different ways than others, and to develop new ideas; also, it includes features such as flexibility, multi-directional thinking, environmental awareness, fluent, comfortable and independent thinking and originality (Mangır et al., 1991). In some approaches, creativity is considered as the process of reflecting the subconscious formations out (Hatırnaz, 2010). Barlett's 'openness to experimentation, getting rid of patterns', Torrance's 'personal problem-solving skills and abilities' (Torrance, 1972), Landau's 'ability to establish relationships that have not been established before and thus to reveal new experiences, different ideas and new products in a new thinking scheme' are some other definitions of creativity (San, 1985). Most of the theories developed on the phenomenon of creativity emphasize the idea of establishing new and original connections between current-past knowledge and experiences in the formation of creative thinking (Cross, 1990). At this point, it is important to include environments that contribute to the development of creativity within design education.

Workshops can increase creativity and provide spaces suitable for the experiential learning approach by working on a common purpose while bringing in concrete experiences and become a mediator in the synthesis of present thoughts with past learning experiences. Bringing individuals together at a certain place for a short time, workshops make their attendees learn by practice while developing diverse approaches to design problems. As a consequence, the information and skills learnt are not quickly forgotten. As their definition suggests, these workshops are where production takes place. This production takes place together in a communicative environment free from its style of representation; moreover, sensual attitudes that support a flexible and playful manner enhance motivation in education by bringing forward the abstract, immeasurable, unpredictable and nondeterministic characteristics of design. According to Tovey et al. such a learning practice can also be seen as an experience of identity formation: it is not just an accumulation of skills and information, but also a process of becoming, a certain kind of creative and critically minded design practitioner. It is through this "transformative practice", that learning can become a source of motivation, meaningfulness, personal and social energy (Tovey et al., 2010). Schön also emphasized that learning by doing and practice-based studies are the most important feature that distinguishes design education from other disciplines (D. A. Schön, 1985). Based on these opinions, it can be stated that workshops support reflection-based experiential learning model by the improvement of diverse approaches to design problems, availability of interdisciplinary studies and disappearance of formal borders between leader-attendee, support of group work and collaboration and provision of improvisation in the process.

The general principle of improvisation is spontaneity. It is to express oneself momentarily without a planned pre-design process and come forward with an output. Surely, in skill, sometimes preparation and experience has importance; however, the person is in a flow where he does not have a critical approach towards what he is doing during the self-reflection process. Gerber (2007) asserted that improvisation increased creativity in both individual work and design groups. According to Toivanen et al. (2011) and Holdhus et al. (2016), improvisation has a positive role in increasing awareness of individuals; in peer relations among students; and in verbal/non-verbal interactions.

Principally, corresponding improvisation with design practice may seem challenging; however, this can be available by interdisciplinary works that allow artistic experiences within the education program. These experiences that are earned by expressions have an important role in unique thinking and self-reflection of the individual. Feeding on different disciplines helps to create creativity and build original relationships and connections. In art, symbols evoke connotations whose interpretation contributes to conceptual thinking. Artistic action allows the symbolization of certain phases of human life; in other words, it supports through insight and learning by the recording of that moment of individual's life. It provides 'seeing' beyond looking, 'listening' beyond hearing, 'feeling what is touched' manually inspecting (Mercin & Alakuş, 2007; San, 1985). Related to this subject, Aytekin (2019, p. 87) stated that 'borders that determine study areas of disciplines, knowledge, concept, and movement habits redefine themselves when their habits coincide with the wall of another discipline'. He claimed that, due to transitivity, it is possible for information, concept, phenomena, and disciplined movement styles to intermingle despite the presence of borders.

It has been put forward by many researchers that in education, the use of interdisciplinary approaches and the integration of design and art in education process bring in flexible and multidisciplinary thinking in addition to being open and sensitive to novelties to students. McDonnell (2011) researched the parallelisms between art and design processes, taking attention to the relation of motivating, surprising, and exciting structure of artistic creations with creativity. According to Düzgün, Bekdaş and Yıldız (2018), the integration of art in design education is beneficial in terms of conceptual thinking, formation of meaning, interpretation, abstraction and familiarization in relation to the design process. The Foundation for Interior Design Education Research in the USA takes attention to the common features of interior design and fine arts and supports interdisciplinary works. Clemons indicates that the meeting of design and art on common ground supports student's learning while enhancing awareness of these areas (Clemons, 2006). That art-centered works should be integrated to education is a topic also discussed by Dewey in terms of self-reflection. Reflection-within-action which emerges during artistic action corresponds to Dewey's relatively less known aesthetic philosophy. Dewey stated that experience of fine arts, natural or daily phenomena is an 'aesthetic experience' that provides learning on condition that it includes the concepts of unity and harmony; moreover, he considered aesthetic experience as a social and cultural dimension of human life at the same time, as one of the impacts that shapes life through understanding and learning (Dewey, 1934; Pugh & Girod, 2007). In design education, it is important to find new ways of accessing information, developing new perception and transformation styles, and achieving new approaches. Furthermore, the need to acquire a diverse point of view can be realized in meeting art and design education on common grounds.

Today, techniques by which the student can self-reflect and express his thoughts have increased, methods which students can use freely for self-expression started to come into prominence. Ways of artistic expressions such as music, dance, poetry, installation art, cinematography, photography and animation gain more significance for developing the skill to transfer thoughts to a diverse environment and for developing creative thought. Installation, at this point, come into prominence in design programs as a medium that combines art and space.

Installation Art

Installation is a form of art created for a specific place; consisting of three-dimensional works that change spatial perception and requiring the involvement of spectators. In Edward Lucie-Smith's Thames & Hudson Dictionary of Art, it is defined as 'mostly temporarily organized, three-dimensional works of art where the spectator can be involved in'; it contains the exhibition of objects related to space and to one another on

a surface of meaning and perception (Özçam, 2019). Various authors have placed the nature of installation as an art form in its site-specific character (Onorato, 1997), spectatorship (Bishop, 2005; Reiss, 1999) or its hybrid properties (Suderburg, 2000). The term installation was first used in the 1970's to describe a process of work that goes beyond the artist's studio and aims at forming a direct contact with the audience, with the understanding that the context in which a work of art is presented affects the experience and meaning of the work. With this approach, an emphasis has been placed on an artistic practice approach that refers to and criticizes the ideology of the institutional context, and an artistic practice that adopts the exhibition environment but also tries to change it (Saaze, 2013).

Made for a certain space, installations create an environmentally-integrated impression. In this sense, works can stand alone independent of the structural features of the space; integrate only with a certain point of the space; or transform the space itself and incorporate the audience into itself. For example, Numen's installation at the Moscow Garage Museum of Contemporary Art has been programmed as a structure that creates space within space with the use of biodegradable organic band material and the wide openings of the space in which the audience can be included (http://www.numen.eu/installations/tape/moscow/) (Figure 1).

Figure 1. 'The Coming World: Ecology as the New Politics 2030-2100', Garage Museum of Contemporary Art, Numen, 2019.

Behind the spatial harmony of installations which are sometimes perceived as random formations or organizations, there is in fact a conceptual fiction. Installation which overlaps design practice in terms of containing an idea and requiring a preparation/project process is an area where all branches of art and design such as architecture, music, poetry, sculpture, performance and theatre can be a means of expression (Süzen 2010). Many artists and critics took installation as an expression of the term 'Gesamkunstwerk' as the 'sum of arts' which means that 'different types of art can excellently express life on a common denominator' (Ayözcan Atalar 2006). According to De Oliveira et.al (2004), installation works include all of the terms such as 'intervention', 'interaction', 'inner space art', 'atmosphere formation', 'activity' and 'project'.

Parallel to its versatile/interdisciplinary structure, it can be said that installation can support creativity through concept development, experiential practice, and by which user-space-function relations are evaluated with technical and aesthetic approaches. The presence of experimental/involving environments and moving perception of space to different dimensions has made installation a frequently applied method in design education in recent years (Bonnemaison, Eisenbach, and Gonzalez 2006). In design education, it is important to take care of concrete elements such as environmental data and human-environment relations in addition to abstract and conceptual elements that make the form in space. The feature of installation which is uniqueness to space brings forward the need to do an environmental analysis first. Furthermore, after the

background of the project is set, the process is relatively independent in its progression. There is no limit for the use of materials in installation; any material adaptable to conceptual background and budget can be used within the space. With the application step which sometimes proceeds in an improvised manner, students not only improve themselves artistically but also express their ideas freely and reflect themselves.

Goals & Method of the Study

In the study, perspectives of students and reflection of ideas they developed during a project process via installation are researched in addition to their level of applying these ideas. In the formulation of a hypothetical perspective, Schön's reflection theory presents a beneficial model. When it is considered together with Dewey's aesthetical philosophy, art-integrated experiential learning method is presumed to present an alternative design approach in interior design education. The study which was based on this hypothesis focused on social and mental phases that attendees exhibited in design and practice processes. The study is realized via a combination of qualitative and quantitative methods. In the qualitative analysis section, three studies exemplifying the project process and student experiences are included. These studies were selected due to their sampling of the students' performance and the problems they experienced in different subjects in the process of idea development and implementation. In the quantitative analysis section, the results of the questionnaire made with the students after the workshop were shared and answers were sought for the following questions:

-In the installation project, did students struggle the most at the idea formation phase or in practice? What are the most challenging subjects related to these phases?
-What is the role of the subject on the process?
-To what extent were environment-human-space relations considered?
-Could students conduct the process as they planned; were the first ideas compatible with the end-products? To what extent did improvisation take place in the study?
-Have the students been successful in reflecting their ideas / themselves?
-Has the project contributed to space perception?

The study was realized in the Spring semester of 2018-2019 Academic Year, Undergraduate Academic Calendar in Addresistanbul Home Decoration Center in İstanbul under the title 'Call for Colour / Installation Workshop'. Seven spots were indicated in the interior spaces of the structure which is a trade center for interior design products and furniture. Participants were selected on a voluntary basis among the third and fourth class students of interior design department of Mimar Sinan Fine Arts University, which is a pioneering university in the fields of art and design. No payments were made to the participants. The age medium of all of the participants is 20-25. On the other hand, researchers have been working as instructors in the same university for over 10 years; during this time, they have conducted several workshops and installation projects. Researchers participated in the process as both instructors and observers, reporting the notes in detail and collecting visual materials during the design and production processes.

Consisting of seven groups made of pairs (five men, nine women), fourteen students in total were given seven trendy colours and identity metaphors regarding these colours were as follows (Figure 2).

Living Coral (coral red) energetic, brave, sociable, funny, surprising, active.
Jungle (green): adventurous, wild but serene, free in its natural state, utopian, exotic.
Earthy (beige and earthy colors): eclectic, intellectual, natural, timeless, calm.
Classico (burgundy): luxury-loving, strong, sophisticated, charming, shimmering.
Cravings (dry rose): open to new discoveries and flavors, social, flirty, eccentric.
Ice Cream (pastel colors): fun, full of surprises, childish.
Blue Print (light blue): deep, dreamy, calm, boundless, introverted, reflection, illusion.

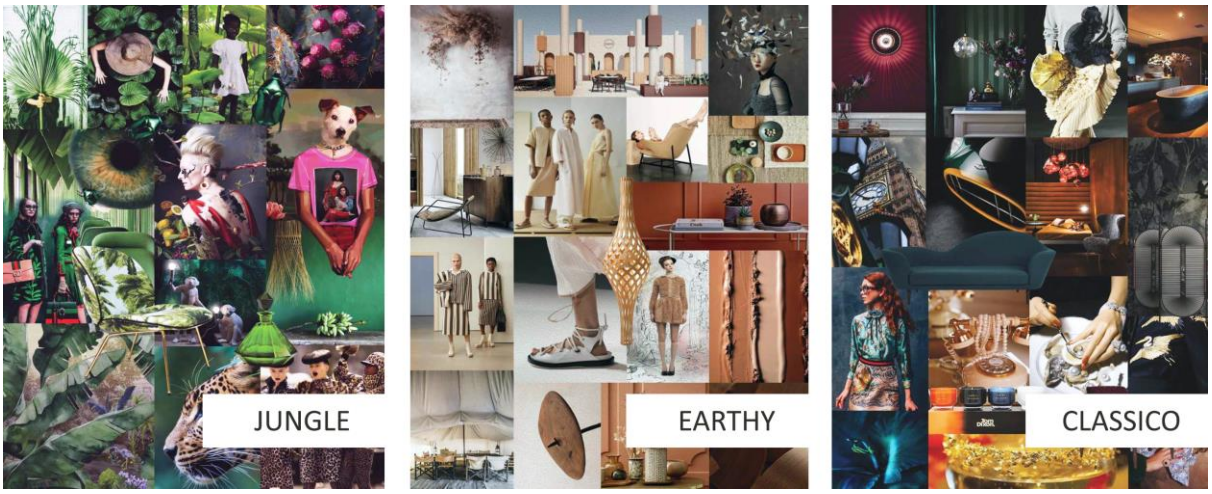


Figure 2: Three identity concepts given to student groups.

The students were asked to do installations in the shopping center to the formerly indicated spaces over the concepts they would create with these colours. At the first step, the students identified and gave meaning to the colours that defined their group with different identity metaphors. Based on the concepts that define the identities, ideas were formed; afterwards, projects were developed based upon the installation areas. The focus of the study is to make students reflect their definitions for colours and space-based installation projects via design and practice. Formation of the conceptual background and clarification of the design phases lasted for two months; on a certain week day, students shared ideas with their instructors, drawing, doing presentations of concept and practicing by two and three dimensional models and organizing trips to installation spaces for the purpose of perceiving and internalizing the area. Furthermore, they did detailed research on the materials they planned to use, talking to different producers and collecting samples. Works whose installation phase lasted for ten days were exhibited in the shopping center for a long time.

Evaluation of the Process via Three Selected Projects

In this section, three projects were selected on the basis of exemplifying the changing performances of the students and the problems encountered in different subjects in the process of idea development and implementation. In the first project dealing with the subject of 'Jungle', which is identified with adventure, freedom and exotic themes, the group members firstly tried to reach the meanings of the theme they chose for them. At this point, a memory one of the members remembered about his childhood constituted the starting point of the concept they developed. The student commented: 'We used to look under stones while walking with my father in the forest. Different animals used to appear under them. We would be surprised, even chilled. Here, the challenge was to make an abstraction of the idea. We aimed to capture the same feeling with today's technological perspective, and we wanted the audience to feel as if they were walking in a mysterious forest. At this point, we tried to give an image of a pixelated forest using a large number of boxes. The darkness of the space given to us and the fact that we can light the places we want in the direction we want, made it easier to evoke the feelings of curiosity and exploration we aimed'.

The project group progressed very quickly in the process of finding ideas and the most difficult stage was experienced when choosing materials at the point of forming the boxes. In the first place, when they saw that the modules that they thought of as MDF would be very expensive and exceeded the budget given to them, they started to look for alternative solutions and finally they decided to use thin laths and acetate (Figure 3a). The group members who could not clarify the material for a long time had difficulties in

planning their time during the application week and were barely able to complete the modules at the end of uninterrupted work. Deciding on the form of the installation during the application, the group observed which angles would give better results in terms of the position of the modules after analyzing the area thoroughly and formed the structure by hanging and stacking (Figure 3b). The students were able to reach the desired result after many experiments in creating the structure and providing a dramatic effect with lighting (Figure 3c).

Students who caught the group dynamic late but completed the project with high motivation by supporting each other towards the final stated that the study had several contributions: 'The fact that we chose the subject ourselves was one of the factors that made us work on it with pleasure. The major challenge for us was the inability to use time efficiently. We had to produce a large number of boxes and we started production late as we decided late with which material to implement the idea. The biggest contribution of this study to us is that it taught us the necessity to do better time planning'.

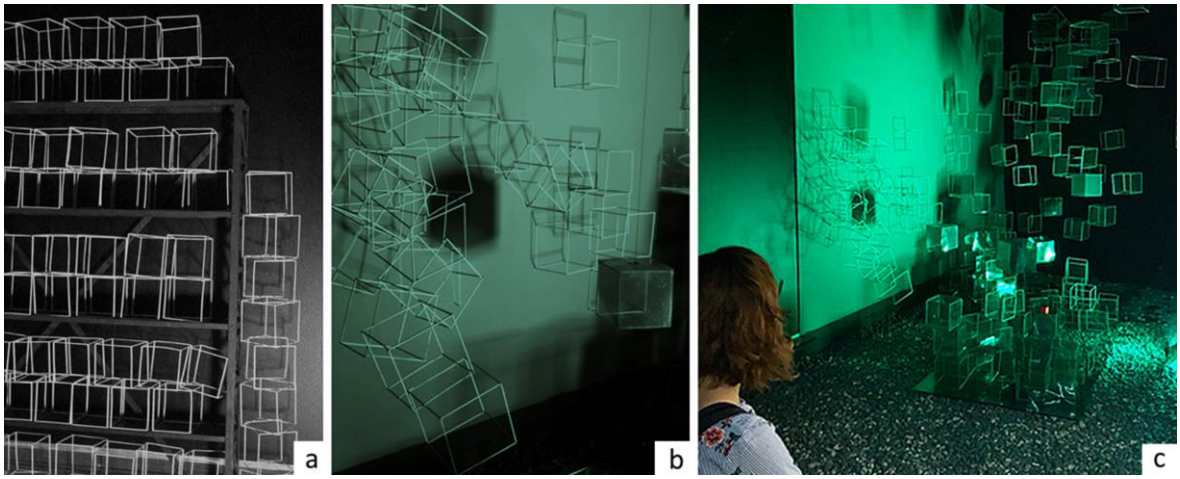


Figure 3a, 3b and 3c. Construction stages of the Jungle group and the installation placed on the site.

The second project examined the concept of 'Earthy' which was characterized with features such as nature and tranquillity with earthy colors. At the beginning of the process, they discussed the concept of returning to nature and came up with ideas on how to reflect this concept. One of the group members commented: 'In ancient times people had a strong communication with nature. Today, this bond has been broken. By touching natural materials, it is possible to feel one with the world again. For this reason, we decided to construct an amorphous structure with unprocessed material that emphasizes handwork and unity, a structure that the viewer can experience by passing through and touching'.

In this context, group members who decided to use bamboo reed in their projects primarily made form studies and produced a series of sketches and 3d mock ups with no precise scale (Figure 4a). Students who had never worked with bamboo before and did not have an idea about the shaping of the material made evaluations on samples of different thicknesses. The fact that they could not predict how much material they would need for their work; how much material they would spend in the process; and the limited budget emerged as a challenge at this point. After reaching a common decision, the students who obtained the material in the thickness and amount they found suitable first made formation experiments. After keeping the bamboo canes in hot water, they managed to bend them as they wanted by tying them with strings (Figure 4b). It was not possible to catch the form which was the final product they wanted to design in the first

place; for this purpose, they disassembled and reassembled the parts many times and changed some points completely (Figure 4c).

'In the beginning, there was a material whose characteristics we did not know about. We tried to give the form we wanted by trial and error method. We loved the material; we built a relationship with it. We shaped it; at the same time, it shaped us. It was a bit annoying not to get the result we expected on the first try, but by trying it over and over, we achieved better results. In this respect, we can say that our idea generation process was more fluid than the implementation phase. The construction was a form that could be passed through and viewed from all sides in front of the entrance door of the shopping center. There were shop windows around it and we were not supposed to cover them either. Therefore, we had to consider functional, aesthetic and symbolic parameters during the application process. Having to consider the relations of the structure with the environment in detail enabled us to make versatile evaluations'.

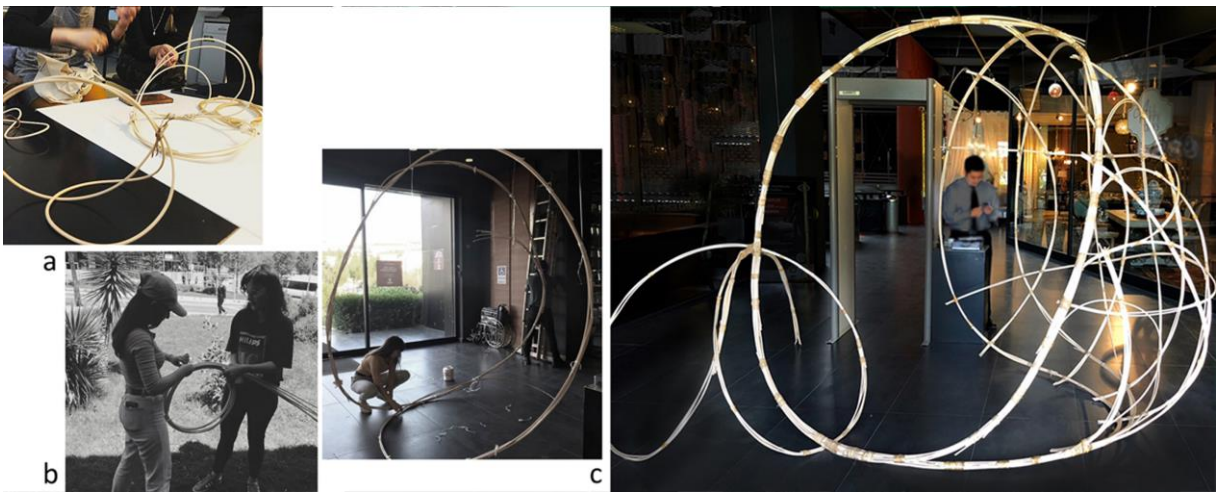


Figure 4a, 4b and 4c. Working processes of the Earthy group and the final structure.

The third project progressed relatively differently compared to the others. The group members who did not choose the 'Classico' theme, which emphasizes luxury, glitter and power, and could not decide on the concept for a long time because they could not adapt to the subject, had difficulty in developing ideas in the beginning. However, not giving up, the group started to clarify their thoughts towards the end and established a relationship between the concept of luxury and the metaphor of 'stage'. The comments of the students about the process they went through: 'In our work, we tried to create a stage or podium-like space to reflect luxury and vanity. The fact that the area is an island-like platform that can be seen from all sides helped us to create this perception. At the same time, we were able to strengthen the effect by including elements such as dramatic lighting and fog in our design. We hadn't determined any form before, we wanted to improvise. We aimed to create a sparkling world with shiny and high quality materials that remind us of luxury'.

No one knew exactly what the group, including themselves, would do by bringing brass sheets, velvet fabrics, silvery spray paints and fluorescent lamps to the area where they would work during the application week. They took a lot of effort while fixing the brass sheet material. It was observed that they decided on the main form during the application by evaluating the environmental data and the concept. They created a corridor-like space with the lighting fixtures they hung around the structure, which they created by bending the brass plate spirally (Figure 5a). The gilded painted spherical

seating element which they put at the end of the structure took place in the space as a symbolic element, strengthening the 'stage' effect. Not referring to any form and being shaped by the effect of the gross material and lighting elements especially selected for the area, the project exemplifies the experimental design process (Figure 5b).

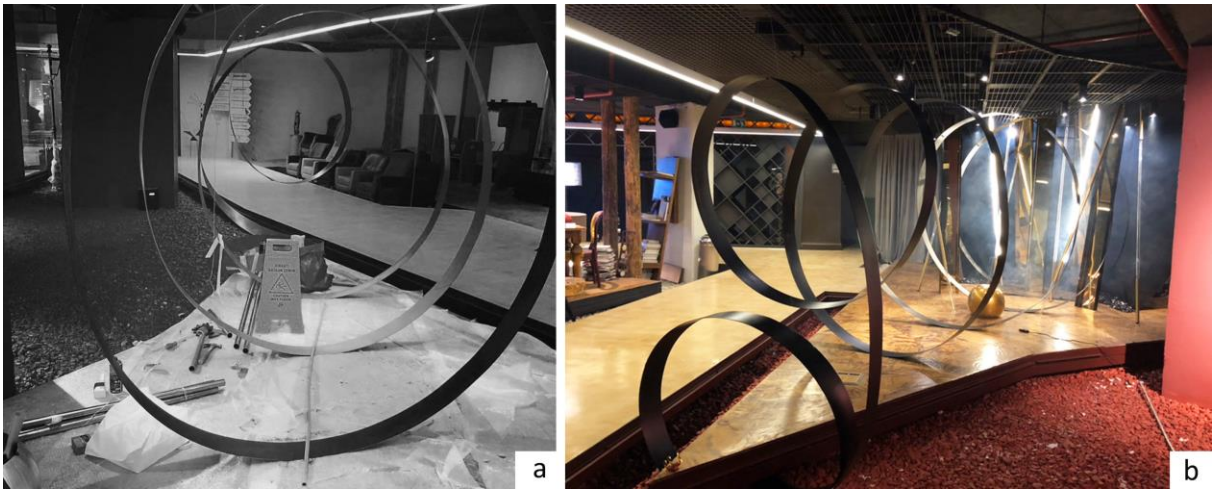


Figure 5a and 5b. Installation process of the Classico group and the final design.

Quantitative Data Collection and Analysis

At the end of the study, a questionnaire was applied to students for finding the answers to research questions based on the observations and approaches throughout the workshop. This method was preferred since it is a fast way of collecting data and a practical tool for attendees to express their point of view (Creswell and Creswell 2017). Questions (can be seen in Table 1, with percentage and frequency values) whose bases were prepared by writers were applied to the attendees by using the segmental method and collected at once. Data gathered from the questionnaire were analyzed by using IBM SPSS Statistics 26 program, frequency, arithmetic means and Spearman Correlation Analyses. In Table 1, frequency and percentage analyses can be seen. In the evaluation of the questionnaire, the assessment interval of arithmetic means based on 5 Likert scale was used. The items of the questionnaire are 'Absolutely agree', 'Agree', 'Indecisive', 'Disagree', 'Totally disagree'; the second and fourth questions are left to be filled in by students as open-ended questions. All analyzed data in the study are gathered from questionnaire data.

Table 1. Percentage and frequency values of evaluation questions

	Totally disagree	**Disagree**	**Indecisive**	**Agree**	**Absolutely agree**
1. Was your idea formation process fluent?	0	1 (7,1)	2 (14,3)	8(57,1)	3 (21,4)
2. Which topics challenged you during the idea formation process?					
3. Was your practice process fluent?	0	1 (7,1)	7 (50,0)	4(28,6)	2 (14,3)
4. Which topics challenged you during the practice process?					
5. Do you think the subject you worked on was appropriate?	0	0	1 (7,1)	5(35,7)	8 (57,1)

6. Do you believe that you expressed yourself/your point of view through your design sufficiently?	0	0	2(15,4)	9(69,2)	2 (15,4)
7. In your study, did you proceed by taking environment-human-space relations into consideration?	0	0	0	5(35,7)	9 (64,3)
8. Do you believe that your artwork contributes to the perception of space?	0	0	2(15,4)	3(23,1)	8 (61.5)

Results and Discussion

In this section, the results of data analyses are presented. Primarily, the percentage and frequency analyses of answers about idea formation and practice phases are listed. As it is seen on Table 1, students answered the questions about idea formation and fluency of practice during installation process as the phase of idea formation being more fluent. Among the answers to the 2nd question 'During the idea formation process, which topics have you found the most challenging?', formation of the conceptual background was 30,8%, which was followed by manufacturability with 23,1% (Table 2). When the answers students gave to the 4thquestion 'Which topics challenged you during the production process?' are analyzed, insufficiency of knowledge of materials comes first on the list by 50% followed by budget by 30% (Table 3).

Table 2. Expression of answers about challenging topics during the phase of idea formation in terms of percentages

	n	**%**
Equipment selection	1	7,7
Manufacturability	3	23,1
Dilemma among ideas	1	7,7
Conveying of ideas	1	7,7
Formation of conceptual background	4	30,8
Application of the idea	3	23,1
Total	**13**	**100,0**

Table 3. Expression of answers about challenging topics during the phase of production in terms of percentages

	n	**%**
Budget deficiency	3	30,0
Inexperience about the equipment	5	50,0
Insufficient practice time	1	10,0
Insufficiency of technical service	1	10,0
Total	**10**	**100,0**

Another outcome of the study is the detection of a positive and statistically meaningful relation between the fluency of production process and suitability of the subject ($r=0,581$; $p<0,05$). Moreover, a positive and statistically meaningful relation has also been indicated between the thought of suitability of subject and self-reflection ($r=0,564$;

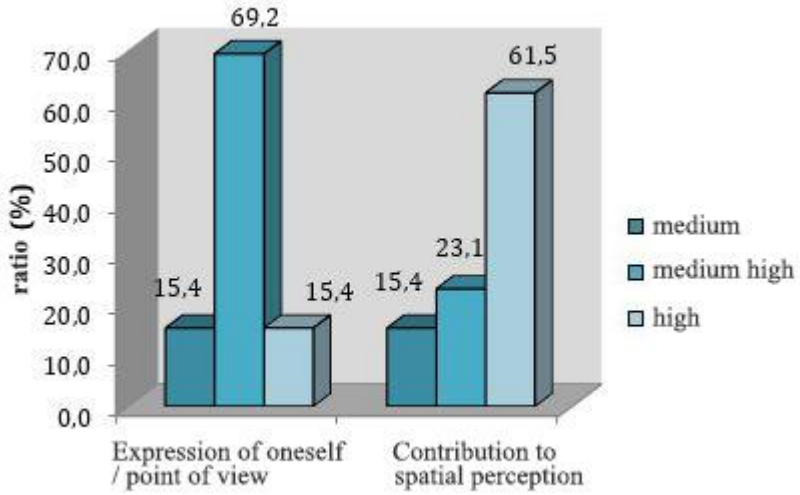
p<0,05). However, due to the number of attendees, it is believed to be more meaningful in a wider study (Table 4). In 6th question, when self-reflection levels are analyzed in terms of frequency and percentage, students are seen to reflect their ideas at medium high level. Additionally, Table 5 demonstrates that students of many levels believe that the study contributes to their perception of space.

Table 4. Assessment of relations among suitability of the subject, self-reflection, fluency in design and production processes.

		r	p
Suitability of the subject	Fluency in design process	0,526	***0,053***
	Fluency in production process	0,581	***0,029****
	Self-reflection	0,564	***0,036****

r: Spearman Correlation Analysis **p<0,05*

Table 5. Percentage graph of answers given to self-reflection and contribution to space perception questions.



In relation to the experimental feature of the study and the low number of attendees, although some results which include positive relations are not statistically meaningful, the data indicate interesting results about design students' use of installation as a method. When the answers given to design and practice processes are observed, it is seen that students have the most difficulty in forming the 'conceptual background' during idea formation. This outcome indicates that students have difficulty during the evaluation of a real space and conceptual background when different parameters such as material selection and budget are involved. On the other hand, that idea formation process being more fluent than practice process shows that students are more experienced and conscious in forming theoretical background than practice; as a result, manufacturability appears as a problem at the idea formation stage. The reason for this can be shown as transition from two-dimension to three-dimension and the fact that the project will be applied. As a justification of this result, when students assessed the production process, the most challenging subjects were insufficiency of material knowledge and budget. Incompetence of students in these areas became a challenging factor for both idea formation and practice. An example of this was the uncertainty and time constraints experienced by the group working on the Jungle theme. The project shows that students' gaining knowledge of materials and production during education is significant, thinking

that installation projects planned and applied in 'real' spaces are beneficial in this sense.

The existence of a meaningful relation between appropriateness of the subject and the fluency of both design and production processes shows that selecting appropriate and interesting subjects increase efficiency of students in terms of both idea production and practice. In addition, the positively meaningful relation between the thought of appropriateness of the subject and self reflection indicate the significance of the subject in studies where reflection is at the forefront. The 'Classico' study has well illustrated the relationship between the relevance of the subject and the fluency of the project process. The group members who could not adopt the subject at first had difficulty in developing their ideas and even came to the stage of quitting the project.

When self-reflection levels are observed as frequency and percentage, it is seen that students can reflect their ideas at a level of medium high in their studies. During reflection, sensory awareness, experiences and ideas are independently applied; within in-space installations, the artful nature of installation has been influential in the continuation of the study by giving way to improvisation as a problem-solving method. In this approach, it is possible to state the use of installation as an experiential model in interior design education.

Most of the students believed that the study contributed to their perception of space. This result shows that the space located by installation is in a detailed interaction with its designer by all means and factors, positively contributing to the development of space perception of the designer. As in the case of 'Earthy', the relation to the environment is as important as the installation itself; In addition to the rule that the structure should be maximally perceptible and experienced, it has also been a challenge not to obstruct the visibility of the shop windows in the environment. Students have greatly taken environment-human-space relations into consideration during installation, proving that they tried to think multi-dimensionally during the design process and that they did not only settle with physical features of the space such as dimensions or capacity but also took the environment and user factor into consideration.

Conclusion

With this study, themes that emerge in the use of installation in design education as an experiential learning model are researched. With sensual and physical experiences being in the foreground, experiential learning helps effective learning because it requires self-criticism and new reflections of the individual. Installation is thought to correspond to reflective and experiential learning model in terms of being in the mid-crossing of art and design and being formed of experimental phases. Planned with this idea, information-production took place in a dynamic and highly motivating environment where unique ideas were formed in the light of conceptual thinking. The questionnaire carried out at the end of the project shed light on the design and practice steps of students, providing knowledge about the reflection of ideas, skill of process management, challenging points and contribution to space perception. As a result of statistical analyses and observations on site, the benefits of use of installation as a method can be summarized as follows:

- When installation is realized with groupwork, it increases interaction among people within the context of collaborative learning. Activities such as give and take, experience sharing, and planning of work division within the group help students gain groupwork dynamism.
- Due to the interdisciplinary nature of installation, students can find ways to freely express themselves, able to do reflecting during the stages of both idea formation and practice without any concern for practical function.
- That projects are developed for 'real' spaces provides students with the skills of space perception, observation of individual-space-environment relations, the most efficient use of given volume, and finding planned or improvised solutions to

problems in spaces. In addition, installation develops skills of active learning, idea formation, aesthetic sensibility, flexible thinking, and strategy formation with its concept and practice dimensions. Concrete experiences raise the awareness of the individual by improving the skills of inner and outer observation and mediate in the synthesis of past studies and present thoughts. Their availability of touching the material brings the advantage of production control by putting theoretical information into practice. Moreover, getting knowledgeable about the subjects of time and budget management are other outputs of learning-by-doing model.

In the 21st century, the purpose of education is to cause individuals to earn the approach of lifelong learning, ability and knowledge so as to develop creative solutions to adapt to the changes in their social environment besides versatility. The determining factor of the quality of education is not to store information but the capacity to use it and to produce new information from it. This new constructive learning culture teaches to nourish imagination for a constantly changing world in informal learning environments that provide the development of independent and creative thought. Furthermore, design education has been evolving to a structure beyond disciplines like the design environment whose borders have gradually become vague. The role of studies that trigger and direct creativity and that present the relation between abstract and concrete with different methods and periods gradually increases within education. At this point, interdisciplinary applications come to the forefront and contribute to the design environment by improving creativity and senses through communication, variety, richness and flexible thinking after the elimination of the borders.

With this approach, it was observed that the workshop held with the installation method supports the students' skills of realizing research and design, producing practical solutions to problems, achieving original thinking and communicating well with teamwork, which are all difficult to gain only with formal education. Although the purposes of design and installation art are completely different, data accessed as a result of this study demonstrate that it can be excellent as an alternative method for interior design students to approach space and materials. The need for environmental analysis and the subsequent freedom students get from working in a three dimensional space should provide them with the unusual opportunity to explore ideas and showcase themselves.

The utilization of an installation art practice in interior design education in the means of space perception and real scale experience are positive sides of the study. More exclusive studies including a higher number of students can provide detailed information about the subject. It is foreseen that effective results can be obtained via the integration of this method to the education system by design education programs and via providing positions for students within different scenarios in collaboration with the private sector and workshops organized by industry-university or university-inter/intra departmental collaborations.

Acknowledgements
Being the conductors of the study at the same time, we, Assist. Prof. Dr. Işıl ÖZÇAM and Assist. Prof. Hande Zeynep KAYAN, would like to express our gratitude to other conductors of the study; namely, Assist. Kaan AŞER, Assist. Dr. Gamze KARAYILANOĞLU, and Dr. Burcu KÖSE KHIDIROV, to our students and to directors of Addresistanbul who made this experience possible within the context of 'Invitation to Colour / Installation Workshop' organized in collaboration with Mimar Sinan Fine Arts University, Department of Interior Architecture and Addresistanbul Home Decoration Center.

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