



A sculpture-based learning experience in foundational design education: A case study of landscape architecture students

Esra BAYAZIT^{1,*}

¹Siirt University, Faculty of Fine Arts and Design, Department of Landscape Architecture, Siirt, Turkey

*Corresponding author: esra.bayazit@siirt.edu.tr

Esra BAYAZIT: <https://orcid.org/0000-0001-8390-0212>

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ABSTRACT: This study examines a sculpture-based studio practice implemented in the Fundamental Design course within landscape architecture education. Rather than directly measuring design success, the research evaluates the effects of this practice-based learning process on students' understanding of fundamental design principles and the development of their spatial perception. This study is based on a case study conducted with 15 first-year undergraduate students enrolled in the Basic Design course offered during the fall semester of the 2023-2024 academic year at the Department of Landscape Architecture, Faculty of Agriculture, Siirt University. Data were collected through sculpture models produced by the students and a structured questionnaire. The collected data were analyzed using descriptive statistical methods. The findings indicate that students prioritize fundamental design principles such as emphasis, balance, and appropriateness in their design processes. However, these trends were interpreted as patterns emerging within a specific learning context. The study demonstrates that sculpture-based practices support experiential learning and may contribute to students' abstract reasoning and spatial thinking. The study's reliance on a limited sample size and the fact that the data are largely based on student self-assessments point to methodological limitations that must be considered when interpreting the findings. In this regard, the study offers a contextual and pedagogical evaluation of practice-based learning processes in landscape architecture design education rather than producing generalizable conclusions.

Keywords: Basic design education, design pedagogy, experiential learning, landscape architecture, sculpture

Temel tasarım eğitiminde heykel tabanlı bir öğrenme deneyimi: Peyzaj mimarlığı öğrencileri üzerine bir durum çalışması

ÖZET: Bu çalışma, peyzaj mimarlığı eğitiminde Temel Tasarım dersi kapsamında uygulanan heykel (yontu) temelli bir stüdyo pratiğini incelemektedir. Araştırma, tasarım başarısını doğrudan ölçmeyi amaçlamak yerine, uygulamaya dayalı bu öğrenme sürecinin öğrencilerin temel tasarım ilkelerini kavrama düzeyleri ve mekânsal algı gelişimleri üzerindeki etkilerini değerlendirmeyi hedeflemektedir. Bu çalışma, Siirt Üniversitesi Ziraat Fakültesi Peyzaj Mimarlığı Bölümü'nde 2023-2024 Eğitim-Öğretim yılı güz yarıyılında açılan Temel Tasarım dersine kayıtlı 15 birinci sınıf lisans öğrencisiyle gerçekleştirilen bir vaka çalışmasına dayanmaktadır. Veriler, öğrenciler tarafından üretilen yontu maketleri ve yapılandırılmış anket formu aracılığıyla elde edilmiştir. Elde edilen veriler betimsel istatistik yöntemleri kullanılarak analiz edilmiştir. Bulgular, öğrencilerin tasarım süreçlerinde özellikle vurgu, denge ve uygunluk gibi temel tasarım ilkelerini ön plana çıkardıklarını göstermektedir. Bununla birlikte, bu eğilimler belirli bir öğrenme bağlamı içerisinde ortaya çıkan örüntüler olarak değerlendirilmiştir. Çalışma, heykel temelli uygulamaların deneyimsel öğrenme süreçlerini desteklediğini ve öğrencilerin soyutlama becerileri ile mekânsal düşünme kapasitelerine katkı sağlayabileceğini ortaya koymaktadır. Araştırmanın sınırlı örneklem büyüklüğüne dayanması ve verilerin büyük ölçüde öğrenci öz değerlendirmelerine dayanması, bulguların yorumlanmasında dikkate alınması gereken metodolojik sınırları işaret etmektedir. Bu yönüyle çalışma, genellenebilir sonuçlar üretmekten ziyade, peyzaj mimarlığı tasarım eğitiminde uygulamaya dayalı öğrenme süreçlerine ilişkin bağlamsal ve pedagojik bir değerlendirme sunmaktadır.

Anahtar kelimeler: Temel tasarım eğitimi, tasarım pedagojisi, deneyimsel öğrenme, peyzaj mimarlığı, heykel

INTRODUCTION

Landscape architecture is a discipline concerned with the design and development of urban areas with respect to aesthetics, functionality, and sustainability. The basis of this discipline is the effort to create functional and practical spaces that people can enjoy aesthetically (Xie, 2013; Abacıoğlu Gitmiş, 2026). Urban furniture is integral to these efforts (Yücel, 2006). In this context, urban furniture, which plays an essential role in the texture of cities, is not only functional but also aesthetically valuable (Yıldırım, 2004; Bayraktar et al., 2008; Bayazıt, 2024). Urban furniture is an essential component of landscape architecture and plays a critical role in organizing urban spaces to meet users' needs (Hacıhasanoğlu, 1991).

Urban furniture includes many elements, such as seating units, lighting, garbage bins, sculptures, and children's playgrounds (Yıldızcı, 2001; Güzel & Sözen, 2003; Akyol, 2006). However, urban furniture is not only a functional element but also an artistic element that reflects the character and identity of urban space (Akyol, 2006). These furnishings add character and identity to urban spaces and enable people to spend a pleasant time in them (Kısakürek & Bayazıt, 2018; Bayazıt & Kısakürek, 2020). Urban furniture, specifically designed as artistic objects, can enhance the environment's appearance with various forms, colors, and textures (Bayraktar et al., 2008).

Artistic objects are important urban furniture that give meaning to the places where they are located, with qualities such as texture, color, and size, and are found in squares, architectural structures, parks, and gardens, where they enhance landscape arrangements with their aesthetic values and pleasing designs (Akyol, 2006; Çelik, 2013; Uzun, 2016). According to Booth (1990), artistic objects are defined as three-dimensional works of art, including plastic objects, sculptures, and works made from materials such as stone, bronze, clay, iron, plaster, wood, and ivory, produced by sculpting, molding, or kneading and baking. Sculpture, created in various ways, is the art of conveying feelings, thoughts, and aesthetic values (Habermas, 2000; T.R. Ministry of Culture and Tourism, 2024). According to Alkar (1991), these works of art are "the art of organizing mass in space." Sculpture, which is the art of volume, is a concept of volume and space that constantly offers new meanings when viewed from different angles and becomes visible through light reflections in three dimensions (Demirbaş, 1985; Cakir, 2008). Sculpture, a form of art, has a three-dimensional structure and allows the viewer to interact with it by moving around it (Özcan, 2023). Beyond being a mere object, it is a structure that interacts with its environment.

These artistic objects are important artworks that take place in open, green areas in landscapes and urban areas for aesthetic purposes, emphasizing visual and semantic ethics (Hacıhasanoglu, 1991; Akyol, 2006). In addition to enhancing the visual value of the landscape, artistic objects also serve as expression, reflecting people's perspectives, feelings, and thoughts (Çelik, 2013). Sculptures, seen as plastic elements in urban spaces, are essential in increasing the quality of urban life and other elements that make up the urban landscape (buildings, plants, urban furniture) (Kurtaslan, 2005). Artistic objects, which nourish communicative function and imagination, occupy the place of the oldest and most universal branch of the fine arts (Habermas, 2000; Çakır, 2008).

In fine arts, basic design is an essential concept in landscape architecture, as in many art and design disciplines (Yılmaz et al., 2023; Bayazıt, 2025; Baksi Mazlum & Onay, 2026). This concept serves as the starting point of the design process and provides students with an understanding of the basic principles of design (Pazarlıoğlu Bingöl, 2016). Basic design courses teach students basic design elements such as visual communication, composition, color, shape, and texture, allowing them to explore how these elements can be used (Önal, 2011).

In the basic design course in landscape architecture, students gain fundamental skills in the fundamentals of landscape projects and design (Yılmaz et al., 2023; Bayazıt, 2025). In this context, within the scope of space creation, students can realize their designs by sculpting artistic objects that are essential elements of urban furniture. These projects generally aim to develop students' artistic talents and increase the aesthetic value of urban spaces. Students' sculpture works constitute an essential part of this process.

In Basic Design courses, students are taught the fundamental principles and techniques for designing urban spaces (Atalayer, 2004). In these courses, students typically work on various projects to learn how to plan and organize urban spaces in terms of aesthetics, functionality, and sustainability (Pazarlıoğlu Bingöl, 2016). In this context, sculpture workshops can provide students with practical experience in areas such as material selection, form development, and aesthetic understanding. These workshops enable students to understand the importance of artistic expression in the design of urban furniture and to discover how they can contribute to enhancing the aesthetic quality of urban spaces.

In this context, this study aims to examine the effects of a sculpture-based learning process (implemented as part of the foundational design education in landscape architecture) on students' perception of fundamental design principles and how they incorporate these principles into their design processes. Accordingly, the study aims to evaluate how this application contributes to students' tendencies toward spatial thinking, abstraction, and the application of design principles. Rather than objectively measuring design success, the study aims to highlight the pedagogical dimension of the application-based learning experience.

Urban Furniture in Landscape Architecture: Artistic Values of Artistic Objects

Art is a powerful way to express and influence people's feelings and thoughts (Kesen, 2005). Art in landscape architecture enhances the aesthetic quality of spaces and enriches users' experience. Urban furniture also plays a vital role in landscape design in terms of aesthetics, functionality, and user experience (Güneş, 2005; Erdoğan et al., 2011). Urban furniture is objects designed for people to rest, interact, and use the environment in open spaces (Yıldızıcı, 2001; Akyol, 2006).

In addition to enhancing the functionality of urban space, this furniture is also an expression of aesthetic and cultural values (Akyol, 2006). For example, a seating unit can be seen as a place to sit and part of the urban landscape. A lighting element can be much more than an ordinary lighting tool; it can drastically change the atmosphere of an urban space through aesthetic design and creative lighting arrangements. Sculptures and artistic touches strengthen urban identity and add character to the space (Massey, 2006; Çakır, 2008). In short, urban furniture is not only for people to sit, rest, or interact but also reflects the city's character and adds aesthetic richness. By reflecting the city's spirit, these elements allow people to express themselves in urban spaces and play an essential role in their design.

In particular, urban furniture with artistic value enriches the city's texture and provides both functional and aesthetic pleasure (Bekçi & Özbilen, 2012). Artistic objects in public spaces such as city squares, parks, and streets increase people's interaction with the city and protect urban identity (Çakır, 2008).

In landscape architecture education, many courses related to art and design are offered; Basic Design Concepts, Architectural Design, Environmental Design Project Courses, and urban furniture design are taught to students, primarily focusing on design elements and principles (Düzenli et al., 2018). In this context, artistic elements integrated into urban furniture enable people to form an emotional connection with urban space and increase social interaction. An artistic approach reveals the design of urban furniture and its relationship with space (Massey, 2006).

The relationship between basic design and art in landscape architecture enables the aesthetic and functional organization of spaces (Düzenli et al., 2017a). This discipline uses the power of art to maintain ecological balance and create livable spaces for people. The basic design course teaches students basic artistic principles such as material selection, form, composition, and aesthetic understanding (Sarioğlu Erdoğan, 2016). Student sculpture works can be a source of inspiration in shaping urban furniture used in landscape design.

Basic Design Course in Landscape Architecture: A Creative Ground

Basic design in landscape architecture includes the principles of landscape architecture and the principles of art (Düzenli et al., 2017a; Kumaş & Elmas, 2021). Basic design courses allow landscape architects to develop art learning and thinking (Özkan et al., 2016; Yılmaz et al., 2016). With the education provided, individuals develop creativity, which is embodied in design products.

The basic design education in landscape architecture further emphasizes the importance of establishing a common language of communication among professional groups working in physical planning (Bayazıt, 2025). The basic design is predominantly included in many art education programs (Şenol & Elmas, 2021). For this reason, basic design is one of the first pieces of information to be considered in professional disciplines dealing with fine arts, particularly regarding function and purpose (Wong, 1993). Basic design is a cornerstone and common language for many branches of art (Uysal, 2015). Since landscape architecture is a profession related to physical planning, it is closely related to many branches of art. Outstanding artworks such as painting, sculpture, and architecture form the basis of landscape architecture by developing a common language and principles through basic design (2025). Therefore, basic design education in landscape architecture brings together different art disciplines, providing a common ground of communication and understanding and supporting interprofessional integration.

The basic design course in landscape architecture aims to teach students basic concepts such as the function, aesthetics, and usability of space while also developing creative thinking and problem-solving skills in the design process (Düzenli et al., 2017a; Bayazıt, 2025). The introduction of the introductory design course in landscape architecture departments in Turkey occurred long after the department's educational process. However, this began in the 1980s, and the courses became part of the department's academic program. Although landscape architecture was separated from architecture as a professional discipline in the late 19th century, it has many common points with architecture (Wong, 1993). This is because they both aim to create spaces for people and improve the physical environment.

The general aims of design education in fine arts, architectural sciences, and engineering can be listed as follows:

- Increasing creative capacity,
- To develop aesthetic sensitivity,
- To develop spatial model-making skills,
- Gaining educational sensitivity.

In line with these aims, primary design teaching should be scientific and include systematic methods. When teaching design systematically, many factors that affect its success should be considered (Smith & Ward, 2012; Özkan et al., 2016; Kutlu et al., 2025).

Theoretical and applied courses typically complement the Basic Design course, covering design principles, color theory, composition, and space organization (San, 2010; Özkan et al., 2016). However, practical assignments are also essential for transforming theory into practice and releasing students' creativity (Akbulut, 2014). These assignments generally aim to develop

students' artistic skills and increase the aesthetic value of urban spaces (Uysal, 2015). Students' sculpture works are also an essential part of this process (Şahan et al., 2024).

The introductory design course teaches students fundamental concepts such as the function of space, aesthetics, and usability while developing their creative thinking skills (Bayraktar et al., 2022). This course includes design principles, color theory, composition, and space organization, and allows students to transform theory into practice (Pazarlıoğlu Bingöl, 2016). The basic design education process aims to help students understand the integrity of design elements such as point, line, and color, and to bring them into order by combining them in a composition (Uysal, 2015; Yazıcıoğlu, 2017; Bayazıt, 2025). This process practically teaches basic design principles such as repetition, dominance, balance, contrast, and harmony (Wong, 1993). In this way, students can more consciously realize their creative work by understanding the basic principles of design (Wender & Roger, 1995; Yılmaz et al., 2016). The syllabus is given under these headings (Bell, 2012; Akbulut, 2014; Uzun, 2016):

- Design elements: point, line, direction, size, shape, value, texture, color.
- Visual perception: organization principles, proximity, similarity, good shape features, shape-ground relationship.
- Design principles: repetition, harmony, contrast, concept, balance, unity, sovereignty.
- Space, form, geometry: two and three-dimensional concepts

After the experiences, students are gradually ready for landscape architecture project work. By considering new ways of working and criticizing, students can build a bridge between basic design and landscape architecture (Uysal, 2015).

The introductory design course in landscape architecture education provides students with an essential basis for designing urban furniture (Düzenli et al., 2018). Through sculpting assignments, students gain experience in understanding the artistic and functional features of urban furniture. These assignments develop students' spatial thinking skills while deepening their aesthetic understanding.

Shaping Spatial Thinking: Sculpture Assignment

Physical space design in landscape architecture reveals the continuity of various forms and dimensions, as well as the infinite possibilities for relationships among different volumes, thereby enabling three-dimensional studies of outdoor space (Wong, 1993; Akyol, 2006). By evaluating living and non-living building materials, new technologies and systems, environmental-space relations, and elements such as color and texture, the landscape designer prepares a physical environment that provides ecological balance, enabling people to use the space safely and comfortably (Akyol, 2006). While making these decisions, the designer aims for aesthetic saturation.

In these urban spaces, artistic objects (sculptures) play a critical role in forming a shared memory and urban identity by symbolizing essential events or situations in the lives of individuals and societies. Artistic objects (sculptures) enrich the texture of urban life by interacting with their surroundings and establishing different dialogues with people (Demirarslan et al., 2005). Sculptures can create unique spaces by redefining them and creating new meanings (Çakır, 2008; Bulat & Bulat, 2016).

Architecture and landscape architecture face similar challenges in constructing sculptures, which have an important role in space design. Standing depends on static rules and material quality. The formation of a three-dimensional volume has similar characteristics (Habermas, 2000). The sculpture is three-dimensional and can be developed in the desired shape and direction (Karaçoban, 2016).

Design in landscape architecture starts with two-dimensional and linear studies. The three-dimensional form of design is formed in space and time (Düzenli et al., 2017a). Studies on three-dimensional spatial model-making skills enable students to take the first steps of spatial design with models, drawings, and sketches (San, 2010; Yılmaz et al., 2023). The quality and diversity of these studies enrich spatial education (Uzun, 2016).

Three-dimensional studies are an essential teaching tool that improves students' hand skills and enhances three-dimensional thinking, especially in the hand-shaping process. While such studies strengthen students' hand skills and dominance in the design phase, they also contribute to the training of qualified individuals (Küveli, 2014). Thinking and designing in three dimensions is considered a fundamental skill for success in any professional field. In addition, examining the form, shape, and technical aspects of the three-dimensional universe in our lives reveals that creativity-based art education is more than just two-dimensional painting education (Yazıcıoğlu, 2017; Bayazıt, 2025). In this context, three-dimensional art forms such as sculpture and relief play an essential role in developing these abilities (Küveli, 2014).

In this context, sculpture can be considered an essential part of the introductory design course. Sculpture assignments allow students to transform abstract concepts into concrete form (Özcan, 2023). Through sculptures and models, students develop their conceptual and aesthetic skills in landscape architecture while also strengthening their spatial thinking (Düzenli et al., 2017a; Yılmaz et al., 2023).

A sculpting assignment is usually based on a specific concept or theme. For example, students may redesign a natural landscape element (e.g., a river or forest) or an artificial element (e.g., a park or garden) as a sculpture or model. This task helps students understand design principles, grasp spatial scale, and express design decisions concretely. It also allows students to express their design ideas concretely and evaluate them from different perspectives through sculptures or models (Düzenli et al., 2017a). The sculpture assignment allows students to develop their creative thinking and expression skills in the design process. At the same time, these assignments allow students to develop critical thinking and feedback skills (Düzenli et al., 2017b).

Students demonstrate their artistic expression through urban furniture design, sculptures, and models, creating a variety of designs. These studies allow students to understand the importance of artistic expression in urban furniture design and explore how they can contribute to improving the aesthetic quality of urban spaces.

These courses help future landscape architects make urban spaces more livable and aesthetically prosperous (Yılmaz et al., 2023). In this context, sculpture studies provide students with practical experience in material selection, form development, and aesthetic understanding.

MATERIALS AND METHODS

Research Design

This study was designed as a qualitative case study aimed at examining a sculpture-based studio practice implemented within the Basic Design course in landscape architecture education. Rather than measuring design performance objectively, the study focused on exploring how students perceived and applied fundamental design principles through three-dimensional sculptural production.

Study Context and Participants

The research was conducted in the Department of Landscape Architecture, Faculty of Agriculture, Siirt University, during the Fall semester of the 2023-2024 academic year. The Basic Design course introduces students to core design elements and principles, including form, balance, rhythm, contrast, proportion, and spatial composition.

The study involved 15 undergraduate students enrolled in the course. Purposive sampling was used, as all students who completed the studio exercise were included in the research. Given the context-specific nature of the study, the findings should be interpreted within the boundaries of this educational setting. The study materials consist of the models created by the students for their end-of-term assignments (Figure 1).

The sample for this study consists of 15 undergraduate students enrolled in the relevant course. This sample was selected using a purposive sampling method and represents a specific educational process. Therefore, the findings of this study do not claim to be generalizable.

Data Collection

Data were collected from two sources:

- Student sculpture models produced as part of the semester project. The models were examined in terms of design principles, spatial composition, visual balance, environment-space relationship, and creativity.
- Structured questionnaire administered after the completion of the project. The questionnaire included multiple-response items, 5-point Likert-scale questions (1 = very little, 5 = very much), and open-ended questions regarding students' design experiences and environmental design approaches (Koo & Yang, 2025). The 5-point Likert scale is one of the most widely used rating scales in the social sciences, education, health, and business to quantify attitudes, perceptions, and opinions (Sullivan et al., 2013; Koo & Yang, 2025).

Data Analysis

The data were analyzed using SPSS 28.0. Descriptive statistics, including frequencies, percentages, and mean values, were calculated. In addition, one-sample t-tests were conducted for selected Likert-scale items using a test value of 3 (moderate level) to determine whether students' responses significantly differed from the scale midpoint (Gürbüz & Şahin, 2016; Karagöz, 2017).

Additionally, the possibility of social desirability bias in the data, based on student self-reports, was considered and evaluated within the study's limitations (Koo & Yang, 2025). Open-ended responses were evaluated through qualitative interpretation to identify recurring themes related to design principles, spatial thinking, and environmental relationships. Findings from the questionnaire and student models were interpreted together to provide a more comprehensive understanding of the learning experience.



Figure 1. Student final models

Reliability, Limitations, and Ethics

The use of both student products and questionnaire data provided methodological triangulation and strengthened the interpretation of findings. However, the study was limited by its small sample size, reliance on self-reported evaluations, and focus on a single course group. Therefore, the results should be considered as a contextual evaluation of a specific educational experience rather than as generalizable findings. Participation in the questionnaire was voluntary, responses were evaluated anonymously, and the study involved no intervention beyond regular course activities.

RESULTS

The findings section of the study presents the results obtained by examining the student models and analyzing the survey data. This section also discusses the evaluation of urban furniture as artistic objects through students' sculptural works.

Examination of Student Models

As a result of evaluating the student models for aesthetics, functionality, and basic design principles, it was observed that the students generally created successful designs. The materials, forms, and colors used in the models offer a harmonious and striking appearance to the urban spaces. It was determined that the students exhibited creative and innovative approaches in the design process (Table 1).

Table 1. The appearance of the sculptures in the student models and their relationship to the surrounding space

	Model (Design)	Sculpture	Environment-Space
1			
2			

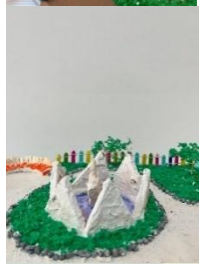
3



4



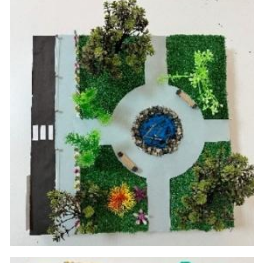
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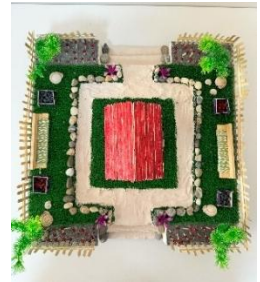
10



11



12



13



14



15



Findings on Basic Design Principles and Sculpture Design

To examine the effects of fundamental design principles (emphasis, rhythm, repetition, balance, appropriateness, contrast, dominance) on Sculpture designs, students were asked

which principles they use in their designs. Since this question was a multiple-response question, a Multiple-response test was conducted using SPSS (v. 28.0), and the sample size (N=59) exceeded the sampling volume (N=15) (Table). According to the survey data in Table 2, students employed several basic design principles in their sculptures. The most used principle was “emphasis” (18.6%), indicating that students used it extensively to emphasize certain elements or features in their sculptural designs. It is seen that the sculpture designs are at the focal center of the environment.

“Balance” (16.9%) and “conformity” (15.3%) were also used at very high rates, indicating that students took care to make their designs visually balanced and harmonious. The principles of “contrast” and “dominance” were used at a rate of 13.6% each. This indicates that the students tried to create a dynamic and impressive visual expression by contrasting and emphasizing some aspects of their designs. The use of the principles of “repetition” (11.9%) and “rhythm” (10.2%), although at lower rates, indicates that these design elements were considered by the students and that they sought to create order and flow in their designs (Table 2).

Table 2. Survey data on the design principles students use in their sculpture designs

		N	Percent
Valid		15	100,0 %
Responses	Emphasis	11	18,6 %
	Rhythm	6	10,2 %
	Again	7	11,9 %
	Balance	10	16,9 %
	Sovereignty	8	13,6 %
	Contrast	8	13,6 %
	Compliance	9	15,3 %
Total		59	100,0 %

The results obtained from the questionnaire data on which basic design principle they adopt more, with the reasons, show that they adopt the principle of “emphasis” more, with 60% among the basic design principles (Table 3). It can be said that the principle of emphasis is used to make their designs more remarkable and meaningful. Open-ended responses provide insights into why students adopted this principle. According to these responses, one student used this principle to emphasize a triangular prism, indicating they wanted to highlight a particular shape or object in their design. Another student stated that he/she preferred this principle because of the “attention-grabbing feature of emphasis at first glance,” which shows that emphasis is an effective visual tool in designs. The principle of balance was adopted by 20% of the students. Students who preferred balance generally stated that they wanted to ensure visual harmony and aesthetic balance in their designs. According to the open-ended responses, one student stated that he believed in keeping life's spiritual, mental, physical, and existential states in balance and integrated the principle of balance with life and design.

Table 3. Survey data on the fundamental design principle they have adopted

	Statistics	
	Frequency	Percent
Emphasis	9	60,0
Balance	3	20,0
Sovereignty	1	6,7
Compliance	2	13,3
Total	15	100,0

One-sample t-tests were conducted in SPSS (v. 28.0) to evaluate the extent to which students considered basic design principles while creating their sculpture designs, the effects of these principles on their designs, and the extent to which they integrated basic concepts into their design processes. One-sample t-tests tested whether the mean of the students' responses differed from a hypothetical value of 3 (neither more nor less).

The t-statistic and p-value ($p = 0.045$) indicate that the degree to which students considered the *basic design principles differed significantly* from the hypothetical value of 3 at the 0.05 significance level. Since the mean difference was 0.60, it can be stated that students considered these principles at a level ranging from moderate to high. The confidence interval also supports this result. The analysis of the question “*Effects of Basic Design Principles on Sculpture Design*” showed that the influence of basic design principles on sculpture designs was relatively high. With a p-value of 0.003, the difference was statistically significant at the 0.01 level, and students reported that these principles influenced their designs considerably. The mean difference and confidence interval further confirm the strength of this effect. The analysis regarding the integration of fundamental concepts into the design process did not yield a statistically significant difference from the hypothetical mean ($p = 0.088$). Although the mean score was above the reference value, this difference was not statistically significant. Therefore, the findings suggest that students integrated these concepts to a moderate degree, but this tendency should be interpreted cautiously (Table 4).

Table 4. One-sample t-test data for the survey questions

	One-Sample Test Test Value = 3					
	t	df	Sig.	Mean Difference	95% Confidence Interval of the Difference	
The extent to which basic design principles are observed	2,20	14	,045	,60	,02	1,18
Effects of fundamental design principles on sculpture design	3,62	14	,003	1,00	,41	1,59
Integration of basic concepts into the design process	1,83	14	,088	,53	-,09	1,16

The survey results indicate how students use basic design principles in their sculpture designs and to what extent they integrate them into their design processes. A crosstabulation analysis of the data, using multiple design principles and assessing the level of integration for each, was conducted. According to this analysis, emphasis is the most frequently used principle: 45.5% of students integrated it a lot, and 9.1% integrated it “very much.” The principle of rhythm was integrated “a lot” by 66.7% of the students, and the principle of repetition was similarly integrated “a lot” by 57.1%. Contrast was integrated “more than” 50% of the time as a principle that students used to emphasize differences, and Sovereignty was integrated “more than” 50% of the time. The analysis results show that students integrated basic design principles at high rates. Evidently, principles such as emphasis, rhythm, and repetition were frequently used and over-integrated into the design process (Table 5).

Findings on Sculpture Design and the Environment-Space Relationship

Open-ended and Likert-scale questions were used to establish the environment-space relationship in students' sculpture designs. The Likert-scale question was analyzed using SPSS

(v. 28.0), and percentages and frequencies were reported. 40% of the students chose “Very much,” and 40% chose “Very much.” This shows that most participants care about establishing a strong connection between the environment and the space and consider this aspect predominantly in their designs. The rate of 13,3% indicates that a small portion of the students focus very little on the environment-space relationship. As a result, 12 out of 15 students stated that they try to establish this relationship to a “very much” or “very much” degree, which reveals that many students attach importance to the environment-space relationship and actively include it in their designs (Table 6).

Table 5. A cross-tabulation analysis of the fundamental design principles they use in sculpture design

		Crosstabulation							
		Emphasis	Rhythm	Again	Balance	Sovereignty	Contrast	Compliance	Total
Integration of basic concepts into the design process	Very little	1	1	1	1	1	1	1	1
		9,1%	16,7%	14,3%	10,0%	12,5%	12,5%	11,1%	
	Less	1	0	0	0	0	0	0	1
		9,1%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	
	Middle	3	1	2	3	3	2	2	5
		27,3%	16,7%	28,6%	30,0%	37,5%	25,0%	22,2%	
	More	5	4	4	5	4	4	4	5
		45,5%	66,7%	57,1%	50,0%	50,0%	50,0%	44,4%	
	Too much	1	0	0	1	0	1	2	3
		9,1%	0,0%	0,0%	10,0%	0,0%	12,5%	22,2%	
Total		11	6	7	10	8	8	9	15

Table 6. Survey data on the relationship between environment and space in sculpture designs

	Statistics	
	Frequency	Percent
very little	2	13,3
middle	1	6,7
more	6	40,0
too much	6	40,0
Total	15	100,0

Students' approaches to establishing an environment-space relationship in their sculpture designs were asked as open-ended questions in the questionnaire. Students' methods and ideas when establishing the environment-space relationship in their sculpture designs vary. When analyzing their responses to the open-ended question, some prominent answers stood out. Some students emphasized the choice of materials and their harmony with the environment, for example, using pebbles to create an aesthetic appearance or keeping their designs in harmony with the environment. Some students tried to reflect the cultural characteristics and the environment's character in their designs. There was also an effort to use elements such as grassy areas and parks in a balanced way. User-oriented considerations, such as by whom and for what purpose, also played a role in the design process. These responses provide an in-depth view of students' approaches to establishing the relationship between environment and space. It also reveals that most students tried to establish this relationship and did so through various creative approaches.

The questionnaire analyses provide measures of students' understanding of the relationship between size, space, and form in the sculpture design process, their evaluation of the benefits of building environmental relationships, and their sense of competence in constructing such relationships (Table 7). One-sample t-tests in SPSS (v. 28.0) compared the measures with a

hypothetical median of 3 (neither more nor less). The analysis of the question regarding competence in constructing the environmental relationship in sculpture design indicated that students reported moderate levels of competence in this aspect of the design process. However, the p-value ($p = 0.072$) was above the conventional threshold for statistical significance. Therefore, although the mean score was above the reference value, this difference was not statistically significant. The fact that the lower limit of the confidence interval fell below zero also indicates variability among students' responses and suggests that competence levels differed across participants (Table 7).

Table 7. Survey data on the relationship between scale, space, and form

	t	df	Sig.	Mean Difference	One-Sample Test Test Value = 3 95% Confidence Interval of the Difference	
					Lower	Upper
Understanding the relationship between size, space, and form	3,69	14	,002	1,13	,48	1,79
The benefit of the experience of establishing an environment-space relationship	4,39	14	,001	1,33	,68	1,98
Competence in constructing the environmental relationship in sculpture design	1,94	14	,072	,53	-,05	1,12

Findings on the Learning and Design Processes of the Basic Design Course

A one-sample t-test analysis of students' responses to the learning and design processes in the basic design course, conducted in SPSS, shows that the course's impact on students is quite positive. These tests were conducted to compare students' assessments of the course's usefulness across various dimensions, using a 3-point (medium) rating. Analyses of the question on the course's usefulness to the design process: Students indicated that the basic design course significantly benefited their design process. This result was statistically significant ($p = 0.002$) ($p < 0.01$). This result may indicate that students found the content of the helpful course. The analysis of the question *of learning basic design concepts during the course process shows that the students learned these concepts quite well and evaluated the course's effect* on this issue positively. The statistically significant p-value (0.000) was relatively low ($p < 0.01$). Analysis of the question on the course's usefulness for designing original designs: Students rated the course's impact on their ability to create original designs as very high. This shows that the course focused on creativity and innovation, resulting in significant gains for students in these areas (Table 8).

Analyzing the question “*Developing Environmental Design Skills in the Course Process*”: It is evident that the course is conducive to developing environmental design skills. This indicates that the course's practical applications and theoretical knowledge successfully developed students' practical skills. Analysis of the question about the effect of the course process on their designer identities in their educational life: Students stated that the course process significantly affected the development of their designer identities. This result shows that the course developed technical skills, students' professional identities, and creative thinking abilities.

Table 8. Survey data on the development of environmental design skills during the course

	One-Sample Test Test Value = 3					
	t	df	Sig.	Mean Difference	95% Confidence Interval of the Difference	
The usefulness of the course for the design process	3,69	14	,002	1,13	,48	1,79
Learning basic design concepts during the course	4,64	14	,000	1,33	,72	1,95
The benefit of the course in terms of designing original designs	4,83	14	,000	1,40	,78	2,02
Developing environmental design skills during the course	3,90	14	,002	1,13	,51	1,76
The effect of the course process on their designer identities in their educational life	3,90	14	,002	1,13	,51	1,76

DISCUSSION

The findings of this study indicate that sculpture-based exercises conducted as part of foundational design education in landscape architecture can contribute to students' understanding and application of design principles. However, this contribution should be evaluated not as a directly measurable indicator of success, but within the framework of a learning experience based on the students' own accounts. The fact that students specifically highlighted fundamental design principles such as emphasis, balance, and proportion indicates that foundational design education is structured around these principles. This aligns with studies in the literature that emphasize the structuring of foundational design education around such principles (Wong, 1993; Uysal, 2015; Yılmaz et al., 2016). However, the findings largely reflect expected trends consistent with the existing literature.

According to the findings, students most frequently applied the principles of emphasis (18.6%), balance (16.9%), and appropriateness (15.3%) in their sculptural models. In particular, the “emphasis” (dominance) principle, adopted as the primary focus by 60% of the participants, plays a critical role in transforming the design into a visual language (Küpeli, 2014). As emphasized in the literature by Wong (1993) and Yazıcıoğlu (2017), integrating elements such as points, lines, and shapes into an arrangement is only possible through the practical application of these design principles (Akbulut, 2014; Düzenli et al., 2017a). Students' high interest in the principle of balance demonstrates that they understand the distribution of weight within a composition and perceive visual balance as an aesthetic necessity (Sarioğlu Erdoğan, 2016; Çakıroğlu, 2020).

One of the most notable findings of the study is that the three-dimensional production process appears to support students' spatial perception and understanding of volume ($p = 0.002$). This result suggests that sculpture-based applications can contribute positively to students' ability to comprehend spatial relationships and volumetric thinking within the context of foundational design education. This sculpture-based approach enables students to translate the image in their minds onto a material, thereby giving it a sense of reality, and to experience the relationship between mass and void (Düzenli et al., 2017b; Yılmaz et al., 2023). As noted by Küpeli (2014) and Bayazıt (2025), three-dimensional studies are more instructive than two-dimensional

applications because they facilitate a multifaceted approach to the design problem and encourage a thorough examination of details.

The fact that 80% of students reported prioritizing the environment-space relationship in their designs suggests that this issue was an important consideration during the design process. However, the results related to students' self-reported competence in establishing this relationship were not statistically significant ($p = 0.072$), indicating that these findings should be interpreted cautiously and primarily as reflections of students' perceptions within a specific studio context (Düzenli et al., 2017b; Özcan, 2023).

Statistical analysis results (One-Sample t-test) reveal that sculpture-based applications have a highly significant positive impact ($p=0.000$) on students' ability to create original designs and learn concepts. This finding supports the validity of the "hands-on" learning method, rooted in the Bauhaus tradition, within contemporary design pedagogy (Akbulut, 2014; Yılmaz et al., 2023). While developing their hand-eye coordination, students are also constructing their designer identities (Düzenli et al., 2017a; Yılmaz et al., 2023).

However, the study has some methodological limitations. Although a sample size of 15 students is a common occurrence in similar case studies on design pedagogy ($n=14$ or $n=15$), it limits the generalizability of the findings (Küpeli, 2014; Çakıroğlu, 2020). Additionally, the reliance of the data on student self-assessments necessitates caution when interpreting the obtained p-values. To measure design success more objectively, the literature suggests using evaluations by independent expert panels and mixed-method approaches (Küpeli, 2014).

The literature frequently emphasizes that foundational design education enhances students' visual perception, composition, and spatial thinking skills (Önal, 2011; Özkan et al., 2016). In this context, the findings of this study align with the existing literature by demonstrating how sculpture-based applications can contribute to students' experiential learning of these skills. In particular, the findings regarding how three-dimensional production processes enhance students' spatial perception align with the results presented by Bayazıt (2025) and Küpeli (2014).

However, the methodology of this study differs from that of some studies in the literature. In many studies in the field of design education, student performance is evaluated using more objective criteria, such as jury evaluations or independent expert opinions (Düzenli et al., 2017a). In this study, however, the fact that the data rely largely on student self-assessments creates a methodological limitation in interpreting the results. Indeed, the literature also notes that students may tend to evaluate their own learning processes more favorably, potentially leading to social desirability bias.

The findings of this study indicate that the way students apply design principles largely aligns with the nature of foundational design education. The fact that students use fundamental principles such as emphasis, balance, and appropriateness intensively is predictable, as these principles are taught in the course and expected to be applied. This situation indicates that the study presents practical reflections on existing pedagogical approaches rather than introducing a new design principle to the literature.

On the other hand, findings indicating that sculpture-based practices may support students' abstract thinking and three-dimensional expression skills align with studies highlighting the

role of art-based learning approaches in design education (San, 2010). From this perspective, the study demonstrates that an interdisciplinary approach (the art-design relationship) in landscape architecture education can contribute to the learning process. However, it should not be forgotten that this contribution should be evaluated not as a direct measurable increase in performance, but rather at the level of students' perception and experience.

In conclusion, this study highlights the potential effects of sculpture-based practices on students' perceptions of design within foundational landscape architecture education. However, the findings should be interpreted not as generalizable conclusions but rather as an evaluation of a practice-based learning experience conducted within a specific educational context. In this regard, the study offers a limited yet contextual contribution to the design education literature.

CONCLUSION

This study examined the effects of sculpture-based exercises conducted as part of the foundational design curriculum in landscape architecture on students' internalization of the design language and development of spatial perception. The key findings of the research are as follows:

- **Internalization of Design Principles:** It was observed that students most frequently applied the principles of emphasis, balance, and harmony in their design processes. These findings suggest that students were able to reflect core design principles in their sculptural work, particularly through the use of emphasis as a focal design element.
- **Three-Dimensional Perception and Spatial Composition:** It was determined that sculpture-based 3D projects enabled students to grasp the relationship between form and space and their perception of depth more effectively than two-dimensional projects. This process has significantly enhanced students' ability to transition from abstract concepts to concrete spatial constructions.
- **Designer Identity and Originality:** Statistical analyses indicated a significant positive contribution of the course to students' perceptions regarding originality and designer identity. In addition, most students reported prioritizing the relationship between environment and space in their projects. However, because students' self-reported competence in constructing this relationship was not statistically significant, these findings should be interpreted as contextual reflections of the learning process rather than direct evidence of performance.
- **Experiential Learning:** This process, based on the "hands-on" principle of foundational design, has improved students' hand-eye coordination and contributed to their ability to externalize mental images.

In light of the results obtained, the following recommendations are offered for landscape architecture education and future research:

- **Curriculum Integration:** Basic design courses should include more applications of sculpture and similar three-dimensional volume arts. These applications should be structured to

support not only the student's visual intelligence but also their tactile and spatial intelligence.

- **Process-Oriented Assessment:** When evaluating student performance, the assessment should include not only the final product (model) but also process stages such as sketches, material research, and the writing of a conceptual manifesto.
- **Methodological Development:** In future studies, to enhance the objectivity of the data, evaluations by independent expert panels should be sought in addition to student self-assessments, and mixed-method approaches combining quantitative and qualitative data should be preferred.
- **Sample and Comparison:** To ensure the generalizability of the study, similar research should be expanded to include different universities, larger student groups, and comparisons of the effects of various artistic disciplines (painting, ceramics, etc.).
- **Interdisciplinary Approach:** It is recommended that sculpture-based approaches, which blur the boundaries between art and design, be linked to upper-level studio courses in landscape architecture, such as those focusing on urban furniture and public space design.

In conclusion, this study highlights the pedagogical potential of sculpture-based practices within foundational landscape architecture education. The findings suggest that such applications can contribute to students' engagement with design principles, spatial awareness, and creative exploration. Nevertheless, due to the limited sample size and the reliance on self-reported evaluations, the results should be interpreted within the boundaries of the specific educational context. In this respect, the study offers a contextual contribution to the literature on design pedagogy and provides a basis for future studies involving broader samples and mixed-method evaluation approaches. Rather than producing generalizable results, the study aims to contribute to the design education literature by presenting a case study of a practice-based teaching approach.

AUTHOR CONTRIBUTIONS

All stages of the study were carried out by the author.

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CONFLICT OF INTEREST STATEMENT

The author declare no conflict of interest.

ETHICS COMMITTEE APPROVAL

Ethical approval was obtained from Siirt University (Decision date: 05.06.2024, Meeting No: 7060).

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REFERENCES

- Abacıoğlu Gitmiş, E. (2026). Deprem sonrası yok olan geleneksel bir konut bahçesinin özgün mekânsal temsili: Hasan Arıkan evi örneği. *Turkish Journal of Forest Science*, 10(1), 1845187. doi:10.32328/turkjforsci.1845187
- Akbulut, D. (2014). Tasarımda temel etkileşim: Temel tasarım eğitiminde bütünleşik ortak zemin. *Sanat ve Tasarım Dergisi*, 1(13), 23–40.
- Akyol, E. (2006). *Kent mobilyaları tasarım ve kullanım süreci* (Yüksek lisans tezi). İstanbul Teknik Üniversitesi, Fen Bilimleri Enstitüsü, İstanbul.
- Alkar, B. (1991). 2000'li yıllarda Ankara Kenti'nin açık ve yeşil alanlarında heykelin yeri ne olmalıdır? *Peyzaj Mimarlığı Dergisi*, 21(30), 77–78.
- Atalayer, F. (2004). Çağdaş temel sanat (tasarım) eğitimi ve postmodernite-geleneksellik. *Anadolu Sanat*, 15, 19–46.
- Baksi Mazlum, S., & Onay, B. (2026). From traditional geometry to contemporary space design: Pattern-based learning process in interior architecture education. *Nexus Network Journal*, 1–23.
- Bayazıt, E. (2024). Academic traces of urban furniture: A bibliometric perspective. *İdealkent*, 16(45), 1403–1434. doi:10.31198/idealkent.1472595
- Bayazıt, E. (2025). *Peyzaj mimarlığında temel tasarım: Teori ve uygulamalar*. Duvar Yayınları.
- Bayazıt, E., & Kısakürek, Ş. (2020). Kentsel donatı elemanlarının kent estetiği açısından değerlendirilmesi: Kahramanmaraş kenti örneği. *Turkish Journal of Forest Science*, 4(1), 40–59. doi:10.32328/turkjforsci.701182
- Bayraktar, N., Görür Tamer, N., Tekel, A., Güner, N., Kızıltaş, A. C., Memlük Çobanoğlu, N. O., & Armatlı Köroğlu, B. (2022). *Görsel eğitimde yaratıcılık ve temel tasarım* (2. baskı). Ankara: Nobel Akademik Yayıncılık.
- Bayraktar, N., Tekel, A., & Ercoşkun, Ö. Y. (2008). Ankara Atatürk Bulvarı üzerinde yer alan kentsel donatı elemanlarının sınıflandırılması, değerlendirilmesi ve kent kimliği ilişkisi. *Gazi Üniversitesi Mühendislik ve Mimarlık Fakültesi Dergisi*, 23(1), 105–118.
- Bekçi, B., & Özbilen, A. (2012). A research on the application of a harmony between personal space and architectural space into a case study like park. *Kastamonu University Journal of Forestry Faculty*, 12(2), 329–338.
- Bell, S. (2012). *Landscape: Pattern, perception and process*. Routledge.
- Bingöl, M. P. (2016). Temel tasarım eğitiminde kavramdan üç boyuta geçişe yönelik bir uygulama örneği. *İdil Sanat ve Dil Dergisi*, 5(21), 339–362.
- Booth, N. K. (1989). *Basic elements of landscape architectural design*. Waveland Press.

- Bulat, M., & Bulat, S. (2016). Sarıkamış donan askerler anısına yapılmış olan anıt heykel. *The Journal of Academic Social Science*, 22(22), 1–16.
- Çakır, T. (2008). *Heykel-boşluk ve çevre ile ilişkisi* (Yüksek lisans tezi). Atatürk Üniversitesi, Sosyal Bilimler Enstitüsü.
- Çakıroğlu, E. (2020). *Temel tasarım derslerinde kavram temelli uygulamalara ilişkin bir eylem araştırması* (Doktora tezi). Gazi Üniversitesi, Eğitim Bilimleri Enstitüsü.
- Demirarslan, D., Algan, Ö., & Yüce, O. (2005). Kentsel mekân tasarımında fiziksel çevre kurucu ögesi olarak heykel: Kocaeli örneği. In *Günümüz Türk Heykel Sanatının Sorunları Ulusal Heykel Sempozyumu Bildiriler Kitabı*. Kocaeli.
- Demirbaş, M. (1985). Mete Demirbaş ile görüşme. *Yeni Boyut Plastik Sanatlar Dergisi*, 4(32), 10–11.
- Düzenli, T., Alpak, E. M., & Özkan, D. G. (2017a). Peyzaj mimarlığında temel tasarım dersinin öğrenme ve yaratıcılık sürecine etkileri. *Elektronik Sosyal Bilimler Dergisi*, 16(64-Ek Sayı), 1450–1460. doi:10.17755/esosder.298092
- Düzenli, T., Alpak, E. M., & Tarakçı Eren, E. (2018). Peyzaj mimarlığı tasarım eğitiminde görsel düşünmenin önemi. *Online Journal of Art and Design*, 6(2), 108–120.
- Düzenli, T., Mumcu, S., Özkan, D. G., & Alpak, E. M. (2017b). Peyzaj mimarlığı eğitiminde kentsel obje tasarımlarının sanatsal açıdan incelenmesi. *Sanat Eğitimi Dergisi*, 5(1), 57–68. doi:10.7816/sed-05-01-04
- Erdoğan, R., Oktay, H. E., & Yıldırım, C. (2011). Antalya-Konyaaltı parklarında kullanılan donatı elemanlarının tasarımlarının kullanıcı görüşleri doğrultusunda değerlendirilmesi. *Artvin Çoruh Üniversitesi Orman Fakültesi Dergisi*, 12(1), 1–8.
- Güneş, S. (2005). Kent mobilyası tasarımında disiplinler arası etkileşim. *Planlama/TMMOB Şehir Plancıları Odası Yayını*, 33, 92–96.
- Gürbüz, S., & Şahin, F. (2016). *Sosyal bilimlerde araştırma yöntemleri* (3. baskı). Ankara: Seçkin Yayıncılık.
- Güzel, A. G., & Sözen, M. F. (2003). Tarih-kent ve estetik bağlamında kent mobilyaları: Antalya, Kaleiçi örneği. In *II. Uluslararası Kent Mobilyaları Sempozyumu & Fuarı Bildiriler Kitabı* (pp. 24–27).
- Habermas, J. (2000). *Kamusal yaşamın yapısal dönüşümü* (M. Sancar & T. Bora, Çev.). İstanbul: İletişim.
- Hacıhasanoğlu, I. (1991). *Kent mobilyaları*. İstanbul: Teknografik Matbaacılık.
- Karaçoban, A. (2016). *Heykel sanatında desenin rolü* (Sanatta yeterlik tezi). Gazi Üniversitesi.
- Karagöz, Y. (2017). *SPSS ve AMOS uygulamalı bilimsel araştırma yöntemleri*. Ankara: Nobel Akademik Yayıncılık ve Danışmanlık.
- Kesen, N. (2005). *Sanat sözlüğü*. Ankara: Nobel Yayınları.
- Kısakürek, Ş., & Bayazıt, E. (2018). Kahramanmaraş kenti örneğinde kent kimliği ve kentsel donatı elemanları. *Turkish Journal of Forest Science*, 2(1), 49–59. Retrieved from <http://dergipark.gov.tr/turkjforsci/issue/36853/408372>
- Koo, M., & Yang, S. W. (2025). Likert-type scale. *Encyclopedia*, 5(1), 18.
- Kurtaslan, B. Ö. (2005). Açık alanlarda heykel-çevre ilişkisi ve tasarımı. *Erciyes Üniversitesi Sosyal Bilimler Enstitüsü Dergisi*, 1(18), 193–222.
- Kutlu, B., Kuş Şahin, C., & Onay, B. (2025). Eğirdir ilçesi örneğinde çocuk oyun alanlarının peyzaj tasarım ilkeleri doğrultusunda irdelenmesi. *İstanbul Ticaret Üniversitesi Teknoloji ve Uygulamalı Bilimler Dergisi*, 8(1), 245–256. doi:10.56809/icujtas.1703450
- Küpel, A. E. (2014). *Çok alanlı sanat eğitimi yönteminin temel tasarım dersi kapsamında öğrencilerin üç boyutlu tasarım çalışmalarında uygulanması* (Yüksek lisans tezi). Gazi Üniversitesi, Eğitim Bilimleri Enstitüsü.

- Massey, J. (2006). Organic architecture and direct democracy: Claude Bragdon's festivals of song and light. *Journal of the Society of Architectural Historians*, 65(4), 578–613.
- Önal, G. (2011). Architectural design process in creativity and cultural schema context. *Uludağ University Journal of the Faculty of Engineering*, 16(1), 155–162.
- Özcan, S. (2023). *Soyut heykelde algı ve form* (Yüksek lisans tezi). Trakya Üniversitesi, Sosyal Bilimler Enstitüsü.
- Özkan, D. G., Alpak, E. M., & Düzenli, T. (2016). Tasarım eğitiminde yaratıcılığın geliştirilmesi: Peyzaj mimarlığı çevre tasarımı stüdyo çalışması. *International E-Journal of Advances in Social Sciences*, 2(4), 136–143.
- Pazarlıoğlu Bingöl, M. (2016). Temel tasarım eğitiminde kavramdan üç boyuta geçişe yönelik bir uygulama örneği. *Idil*, 5(21), 339–362. doi:10.7816/idil-05-21-05
- San, İ. (2010). *Sanat eğitimi kuramları* (3. baskı). Ankara: Ütopya Yayınevi.
- Sarioğlu Erdoğan, G. P. (2016). Temel tasarım eğitimi: Bir ders planı örneği. *Planlama*, 26(1), 7–19. doi:10.5505/planlama.2016.52714
- Smith, S. M., & Ward, T. B. (2012). Cognition and the creation of ideas. In *The Oxford handbook of thinking and reasoning* (pp. 456–474).
- Sullivan, G. M., & Artino, A. R., Jr. (2013). Analyzing and interpreting data from Likert-type scales. *Journal of Graduate Medical Education*, 5(4), 541–542.
- Şahan, Ş., Rahımbaylı, S., Kuş Şahin, C., Onay, B., & Akoğlu, M. (2024). Revitalization of the port areas with sailing sports: A design studio practice. *Online Journal of Art & Design*, 12(4).
- Şenol, N. K., & Elmas, A. O. (2021). Deneysel kolaj uygulamalarının temel tasarım elemanları ile incelenmesi. *Art-Sanat*, 15, 183–201. doi:10.26650/artsanat.2021.15.0008
- T.R. Ministry of Culture and Tourism. (2024). *Türkiye Cumhuriyeti Kültür ve Turizm Bakanlığı*. Retrieved March 11, 2024, from <https://www.ktb.gov.tr/>
- Uysal, E. (2015). Temel tasarım dersine ilişkin öğrenci görüşleri. *Yedi: Sanat, Tasarım ve Bilim Dergisi*, 14, 51–65. doi:10.17484/yedi.26417
- Uzun, G. (2016). *Temel tasarım*. Adana: Ç.Ü. Ziraat Fakültesi, Genel Yayın No. 196, Ders Kitapları Yayın No. A-62.
- Wender, W. V., & Roger, J. (1995). The designlife space: Verbal communication in the architectural design studio. *Journal of Architectural and Planning Research*, 12(4), 319–336.
- Wong, W. (1993). *Principles of form and design*. New York, NY: Van Nostrand Reinhold.
- Xie, J. (2013). Transcending the limitations of physical form: A case study of the Cang Lang Pavilion in Suzhou, China. *The Journal of Architecture*, 18(2), 297–324.
- Yazıcıoğlu, Y. (2017). *Temel tasarım*. İstanbul: İdeal Kültür & Yayıncılık.
- Yıldırım, E. (2004). *İstanbul'da kent mobilyalarının değerlendirilmesi: Sultanahmet Meydanı örneği* (Yüksek lisans tezi). İstanbul Teknik Üniversitesi, Fen Bilimleri Enstitüsü.
- Yıldızcı, A. C. (2001). Kent mobilyaları kavramı ve İstanbul'daki kent mobilyalarının irdelenmesi. In *I. Uluslararası Kent Mobilyaları Sempozyumu Bildiriler Kitabı* (pp. 29–34). İstanbul.
- Yılmaz, S., Baltacı, H., & Alpak, E. M. (2023). Temel tasarım dersinin yaratıcı düşünme üzerindeki etkileri. *Online Journal of Art & Design*, 11(2).
- Yılmaz, S., Mumcu, S., Düzenli, T., & Özbilen, A. (2016). Analyzing the unity concept in design on student works: A case study of architectural design course. *Inonu University Journal of Art and Design*, 6, 1–12.
- Yücel, G. F. (2006). Kamusal açık mekânlarda donatı elemanlarının kullanımı. *Ege Mimarlık*, 4(59), 26–29.