Research Article GU J Sci, Part B, 10(2): 205-218 (2022)

Gazi University

Journal of Science

PART B: ART, HUMANITIES, DESIGN AND PLANNING

http://dergipark.gov.tr/gujsb

Painting Analysis as a New Methodology in Basic Design Education

Tuğçe ÇELİK[1,*], Nurgül İNAN[2]

[1] *0000-0002-2953-6373, Ostim Technical University, Ankara, Turkey*
[2] *0000-0003-3006-9271, Ostim Technical University, Ankara, Turkey*

Article Info

Received: 24/06/2022
Accepted: 30/06/2022

Keywords

Basic Design Education,
Design Principles,
Art and Design Relationship,
Method in Design,
Architectural Education

Abstract

Basic design education is given as a compulsory course in the first year of all design faculties. In this course, it is aimed to develop students' two- and three-dimensional abstract and concrete thinking skills. For this purpose, students are expected to create a strong representation of the formal expression of the design, based on abstract and concrete concepts. For beginner students, the relationship between abstract and concrete concepts may not be very clear. At the same time, the studio environment and jury evaluations are new and strange to students. In addition, Basic Design Education, that intuitive methods are applied, is seen as a complex and difficult process for students. The aim of this study is to improve students' design skills by making transitions between abstract concepts and concrete products and in line with the principles they learned in the lesson. In the Basic Design course covered in this study; a new method with a compositional and analytical method that progresses from two dimensions to three dimensions, aiming to transition from painting, which is a concrete product, to abstract concept and then to reach a concrete product again, has been tried. In an art fair they visited, the students discussed an art work of their own choosing over the light-shadow, part-whole relationship, composition and elements in the frame, and created a new composition. As a result, students were provided to understand the relationship between abstract and concrete concepts more easily and to use them in their designs.

1. INTRODUCTION

Basic Design courses are the first stage that prepares students for art and design education. During this course, students are expected to be taught the principles and elements of design and to be able to transfer the knowledge, experience and skills they have acquired to their work. In this direction, with the help of their knowledge and creativity, students gain the ability to shape matter, to use different materials together, to use color, to transfer basic design principles such as space-fullness, integrity, rhythm, emphasis and balance to their work. In this way, students discover their own creativity and talent and develop an original form of expression.

The aim of this study is to contribute to the development of creativity of students by making connections between abstract concepts and concrete objects that they have difficulty in understanding at the beginning. For this, in addition to the existing methods within the scope of the Basic Design Course, the art of painting was taken as the starting point for the design. The students first examined which design principles were used in the painting they chose and abstracted the painting. They created a new composition by reinterpreting the painting in line with the basic design principles they learned in the lesson. Thus, they were able to solve the design problem with different methods and tools and produce new ideas.

* Corresponding author, email: tugce.celik@ostimteknik.edu.tr

2. DESIGN AND BASIC DESIGN CONCEPTS

The dictionary meaning of the word design is to prepare something by visualizing and shaping it, to create it in the mind, according to the Turkish Language Association (TDK) [1] Apart from this dictionary meaning, it is possible to come across many different design definitions.

According to Bevlin (1994), design is first of all planning for order [2]. According to İnan (2006), design is a process made in the light of past knowledge and experience in order to meet the needs defined in the relevant subject area and/or solve the problems, by using the available opportunities in the best way and to provide the optimum result. At the same time, she defines design as a knowledge-intensive process in which abstract and concrete concepts are evaluated together, resulting in a new proposal that did not exist before [3].

When design is considered as a kind of problem-solving action, the Basic Design course provides students with abstract and conceptual thinking, which is the most basic tool of this action. Analyzing the reality and the given problem, breaking it into parts conceptually, coming from the concrete to the abstract, generating ideas and then returning to the concrete are all possible with Basic Design [4].

Basic design education is the common and initial education process of design disciplines, which reveals the ability of the individual to enact sense, dream, intuition and thought, and enables the formation of creative personalities who can use and develop this ability with an aesthetic order [5].

The aim of basic design courses is not to make a building. Basic design is a thought generation process. Therefore, it has an abstract language of expression. In the process of reprocessing the information gathered from the concrete world and transforming it into an abstract visual expression, the student's visual perception and thinking skills develop. However, the basic design course is an abstract world of lines, surfaces, volumes, colors and textures that will be quite foreign to students accustomed to working with written text and formulas [6].

Basic design is learned by doing and experimenting. The hands-on learning method is essential for basic design [7]. For this reason, computer aided studies are generally outside the scope of the basic design course. Instead of lecturing, discussion over concepts, developing ideas, asking questions are the determining elements of the basic design course.

3. BASIC DESIGN ELEMENTS AND PRINCIPLES

Every design needs the parts/elements that make up the design and the principles that determine their relations with each other. These elements and principles can be handled in different degrees according to the characteristics of the art field. According to Gezer (2019), the elements and principles that still form the basis of art and design education and their competencies continue to maintain their importance and are widely used, even though their numbers and types have changed [8].

3.1. Design Elements

Design has components that give shape to the design, which is necessary for an image that appears in the mind to turn into a final product suitable for its purpose at the end of the process. These components are "design elements", which can be seen when looking at the design product and/or analyzing the product, and can be perceived by breaking the whole. According to the TDK, the word meaning of the element is "the part, the element, the first substance, the principle from which other things are derived, that forms a whole and carries a meaning on its own when separated from the whole". Design elements are point, line, surface, volume, form, light, colour and texture.

Atalayer (1994) defines the point as "the smallest element of dimensionlessness that the eye can see and perceive" [9]. The point determines the place as the main element forming the form. It expresses a center by specifying a defined position in space and is directionless.

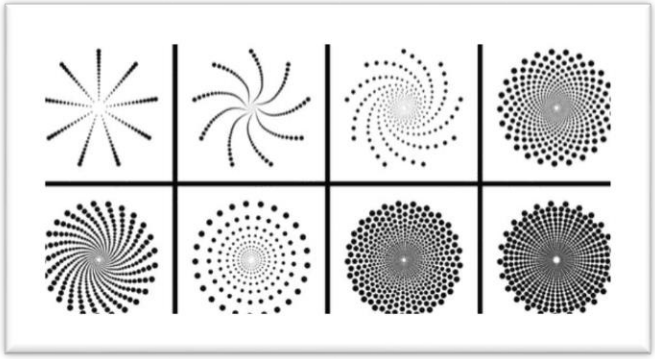


Figure 1. *Design elements, dot [10]*

A continuity of points along a straight or curved line creates a line effect. De Sausmarez (2001) states that the line can be thought of as a chain of points that have come together [11]. Line is perceived differently when used with different components in the design. A line can define a shape and give it boundaries, divide, motion, velocity, or direction [12].

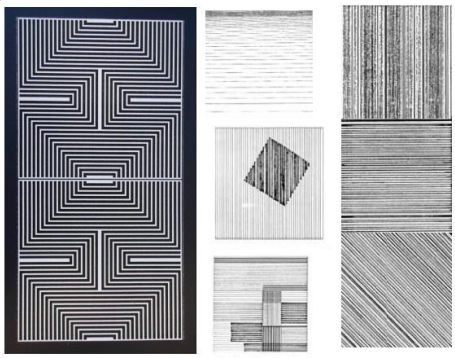


Figure 2. *"Different line compositions" [13]*

The area defined by between parallel lines is the surface. Thus, a two-dimensional element can be formed [14].

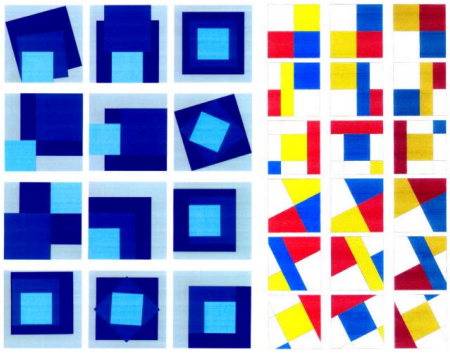


Figure 3. *"Composition experiments produced by establishing different relationships between surfaces" [13]*

The terms of point, line and surface are related to each other [15]. In his work named Thinking Eye, Klee (1964) points out that the movement of the point creates the line, the movement of the line creates the surface (plane, spot), and the movement of the surface creates the volume [16]. Considering the spatial expression; point corresponds to vertices, line corresponds to edges, and the concept of plane to surfaces.

The form is the outer view of the objects that allows them to be defined [14].

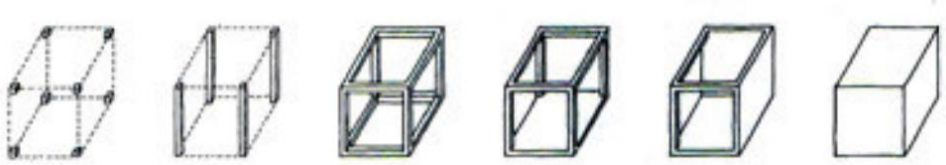


Figure 4. *"Point - line - surface - volume and the formation of form with their result" [17]*

Light makes the visual environment visible. Color cannot exist without light [18]. Atalayer (1994) states that light and shadow are concrete elements that create mass value and give depth perception [9].

Colour perception is relative and closely related to context [19]. Atalayer (1994) states that the internal meaning and importance values created by colours are formed by a contrast effect, as in the examples of proximity-distance, warmth-coldness [9]. In parallel with these thoughts, in the process of basic design education foreseen by Joseph Albers at Bauhaus; it focuses on knowledge of the concept of colour, the psychology of colour, the relative nature of colour comparisons, and the illusory aspects of colour perception [20].

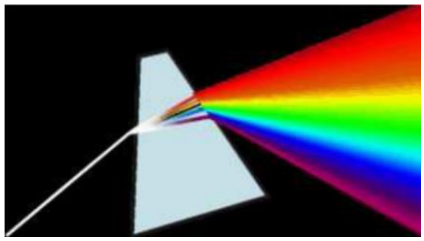


Figure 5. *Refraction of light by a prism [21]*

The concept of texture in basic design education is related to the perception of size and depth. The external structure properties of objects and the objective effect give us are called "texture" [22]. Texture is one of the properties that reveal the characteristic of an object and it decides the relation of the object to the user. This communication is both physiological and psychological. The texture also changes the color feel. Two objects of the same colour with two different textures are perceived as different colours [12].

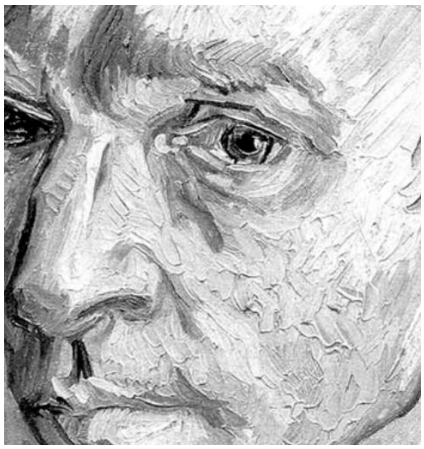


Figure 6. *Van Gogh, "Portrait of Artist" [23]*

3.1. Design Principles

Design principles are guiding for a design to be meaningful and understandable. According to Edirne (2004);

> *"Design principles are essential concepts for the organization of visual information. They describe how visual information is perceived and processed and generate ideas for creating two-dimensional*

images. Design principles are helpful in deciding how to use design elements to create compositions." [14].

Although each new approach in the field of visual design is treated as a different movement or style, the principles they use are basically the same [8].

Visual design principles have their origins in the Japanese art education system. Arthur Wesley Dow, an art and design educator from Columbia University, wrote in his 1899 book "Composition: A Series of Exercises in Art Structure for the Use of Students and Teachers"; mentions that producing art is a formal systematic analysis effort, although it is based on intuition, accumulation and talent. According to this formalist view, design elements are brought together to form a composition. Many art and design education programs have used concepts developed by Dow. With the rise of the Bauhaus School at the beginning of the 20th century, the idea that the form itself should be achieved not with aesthetic concerns but with applied design processes came to the fore [7]. Although Gropius (1947) (Design Topics) does not put creativity in the background, he stated that architecture and related disciplines should have an objective scientific context, unlike other branches of art. In this period when modernist thought and rational science developed, the most obvious change in the design world was the development of Gestalt Principles [24].

The word Gestalt, which refers to how the parts are put together, is defined in the Merriam Webster Dictionary as "a physical, biological or psychological structure, arrangement or pattern phenomenon that contains a functional integrity that cannot be derived from the sum of its parts". For the first time, Gestalt design principles were applied in the Basic Design courses of architects and artists at the Bauhaus Design School in Germany and the State Higher Art and Technical Studios in Russia [25]. Today, many Basic Design education comes from this tradition and can be interpreted as a continuation of this approach.

Gestalt psychology associates itself with concepts such as integrity and context, rather than reductionist, uncompounded (consisting of only elements) and compositional approaches [26]. The results of the Gestalt psychology school, which investigates how a person sees and transforms visual information into a meaningful whole, are among the main factors that determine the design principles. According to this; the whole is more meaningful than the parts that make it up Gestalt perception psychology concepts have brought a different perspective by revealing many previously ignored features in visual perception [27].

Gestalt Theory, which was shaped in the 1930s by the work of Max Wertheimer, Wolfgang Köhler, and Kurt Koffka, is defined by some principles. These principles are basically not superior to each other, but some of them may come to the fore in different designs.

Today, Gestalt theory has a significant impact on visual design activities and is used in many different areas to provide effectiveness regarding visual perception [28]. According to Gestalt psychology, there are certain conditions for a large number of shapes to be grasped. In order for these conditions to be realized, it is necessary to establish some relations between the elements that make up the whole in line with certain principles. These principles can be listed as follows:

Gestalt Figure-Ground Principle: According to Gestaltists, the design element to be distinguished is defined as "shape" and its surroundings as "ground". While the figure is the part that focuses the attention of the individual in the observed stimulus, the ground is the part behind the figure, which is not noticed and does not enter the field of perception [29]. In situations where the distinction between shape and ground cannot be made, the mind draws on past experiences. In basic design, ground is as valuable as shape [6]. With this concept, which is also called foreground and background, the basic design is actually separated from the art that gives importance to the object (shape).

Gestalt Principle of Simplicity: The mind simplifies the visual environment to understand and reduces the shape in question to the simplest and most uniform geometries in a composition [30]. For this reason, the chosen composition or design should be presented simply and clearly, with primary geometries, in order not to create confusion.

Gestalt Grouping Principles: Relationships of proximity, similarity, continuity and closure enable us to perceive objects as a group.
a)Gestalt Proximity Principle: The closer the parts of a design are to each other, the easier it is to perceive them as a whole. The parts do not have to be of the same character, but similarity can increase the strength of the design [31].
b) Gestalt Principle of Similarity: According to this principle, the mind perceives objects or events with similar visual characteristics such as form, color, texture, gender, movement by grouping them [29].
c) Gestalt Continuity Principle: According to the continuity principle, points, lines and stimuli going in the same direction are grouped together and perceived [29]. According to the "law of continuity" or "direction theory", the change in a stimulus is perceived by the brain slowly and gradually. The movement of lines in the same direction is quickly perceived as a whole [32].
d) Gestalt Closure Principle: According to the complement principle, people tend to perceive the whole by completing missing activities, shapes or sounds and filling in the gaps [29].

In addition to Gestalt principles, the following concepts are frequently used as Basic Design principles:

Balance Principle: Balance is the regular distribution of the elements that make up the design, in a sense, it is the state of being in balance with the visual contrasts. Balance builds integrity, gives a sense of determination and self-confidence, gives a sense of completion [33].

Balance types are grouped under four main headings: symmetrical, asymmetrical, circular and crystallographic.

Symmetrical balance is the equal placement of the same visual elements. Repetition of elements makes it look stable and organized, but sometimes it can be boring.

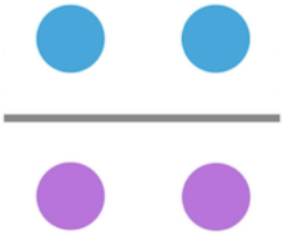


Figure 7. *Symmetrical balance [34]*

In asymmetrical balance, the visual weights of the elements are not equal. Compositions made to achieve a more dynamic, moving and energetic appearance also offer visual diversity.

Figure 8. *Asymmetrical balance [34]*

In Circular Equilibrium the elements are located around a common center. It's easy to maintain focus and attraction points in designs like this.

Figure 9. *Asymmetrical balance [34]*

Elements of equal weight are repeated within the grid system to ensure Crystallographic Balance. In such prepared designs, there is no focal point.

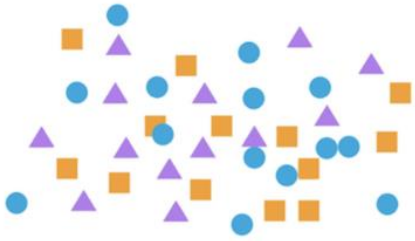


Figure 10. *Crystallographic balance [34]*

The Rhythm Principle provides movement in design. Rhythm is continuity or fluidity that consists of repetition of similar and equal parts. The sense of rhythm in the design can be created by sometimes the colors, sometimes the position of the visuals used, sometimes quantitative values and sometimes the application of contrasts [35]. Repetitive features, harmony of units such as dot, line and area are the subject of rhythm. It can be regular or free.

The Movement Principle aims to revive the static design by directing the viewer's eye to the point desired to be shown. For this, it is necessary to connect the elements in the design.

The Emphasis Principle is important for the design to be a strong design. With emphasis, the designer directs the viewer's attention to certain elements of the design. With the emphasis principle, which plays a major role in the formation of visual importance, the emphasized shape is differentiated from those around it in order to increase attention and interest [36].
The principle of domination (hierarchy, dominance) is based on the principle that one of the elements in a composition is superior to all other elements. Hierarchy is the designer's creating a visual rating according to the message he wants to emphasize in his design. While this hierarchy can be given by distance-proximity, color tones or sizing, this hierarchy can be provided by highlighting different elements with different types of features, and thus a dynamic design can be created [22].

The unity principle provides visual unity, which is the main goal of a design. The most basic way to ensure integrity in a work is to know that each item used is related to another.

The contrast principle is the contrast created between the elements used in the composition. The contrast of these elements, which are opposite to each other in terms of features such as form, color and texture, increases the interest in design and increases the vitality of the design [36].

The principle of proportion refers to the dimensional, dimensional or importance relations of the parts that make up the visual whole, or the smaller parts that make up these parts, with the others.
The alignment principle is to place visual elements along a common imaginary line [37]. Alignment makes the design consistent. The messy effect that occurs when items are placed randomly disappears with alignment.

4. LESSON PLAN EXAMPLE: PAINTING ANALYSIS AS A NEW METHOD EXPERIMENT

The course, which covers two and three dimensional, abstract and/or concrete design studies covering applied methods and processes within the framework of basic design principles and perception theories, is taught as face-to-face training.

It covers two- and three-dimensional, abstract and/or concrete design studies covering applied methods and processes within the framework of basic design principles and perception theories. In this context, two-dimensional design studies involving the multiple relationship between the design element (basic and complex geometries) and the problem, transition studies from two-dimensional to three-dimensional design, color workshop, three-dimensional design studies (plane, volume, color, light-shadow, form / shadow). composition/organization) are covered within the scope of the course.

In the course, it is aimed that students develop a critical and questioning way of thinking and take an approach that explores design and the design process. It is expected that by discussing abstract and concrete concepts, formal expression together with a semantic infrastructure, basic design elements and principles will be revealed through applied two- and three-dimensional design studies.

As a result of this course, the aim is to understand the basic design elements, concepts and principles, to produce original and different solutions to the design problem, and to deal with the design with a holistic approach. Two- and three-dimensional compositions should be analyzed analytically with formal grounds. Composition can be defined as the bringing together of elements within a system in terms of principles [38]. When creating a composition, it is important for Basic Design to create an order and to reach a consistent and meaningful design based on this [39].

Theoretical content of the Basic Design Education course; the concept of design, design elements, composition in design, design principles. In the theoretical part of the course, it was mentioned that there are systematic and design principles and elements that lead the students to think and research, and the students were asked to discover them.

Figure 11. *Stages of work*

After the topics covered in the theoretical content or desired to be explored were discussed, a project was followed in the practical (applied) part, which would enable them to comprehend the subjects of the course. The beginning of the study was a technical trip to Art Ankara Contemporary Arts Fair (2022) with students. Here, they were asked to choose an example that they internalized and related to themselves in some way. They were asked to experience and revisit these examples by relating them to design elements and principles. First, conceptual discussions were made on the selected painting. The feeling created by the sample painting and the reasons for the choice were questioned. Afterwards, some elements were produced by making sketches on the painting by discussing the light-shadow, the part-whole relationship, the composition and the elements included in the frame. They were asked to create a composition in two dimensions by using the principles and elements considered at the beginning together with the produced elements. This composition was created with black and white and cardboard cut/paste technique. The black and white work, which was finalized with the critiques, was colored with a color workshop. While making color studies, the design principle used was adhered to. Contrasting colors are used if the design principle is contrast, and harmonious colors are used if it is harmony. Colors are obtained as a result of mixing the main colors with each other.

In the continuity-based studies, the composition in two dimensions is experienced with the patterns prepared with black-and-white and color studies. In order to obtain diversity and richness with point, line, surface composition level differences, material and texture alternatives made up to this stage, relief works with 2.5 dimensional representation were started. Students are expected to raise a different rule for each line, surface and color in their composition. Texture trials were conducted on the surfaces they preferred to extrude or not. At this stage, the goal is to add a z plane to the design in addition to the x and y planes before moving on to the 3rd dimension. It is the development of the design language created on the basis of two-dimensional studies and the preservation of language unity.

In the last stage, it was expected that the relief work, which evolved from two dimensions to 2.5 dimensions, would be transformed into a three-dimensional model with material and texture alternatives, with the rules and principles remaining the same. At this stage, it was aimed to recognize the material and structure, and in this direction, they were asked to avoid gluing and to try nesting methods. The full-empty relationship, grouping, close-distance relationship, part-whole relationship, integrity-balance-harmony are the evaluation criteria to be considered. In this process, which has passed from 2 dimensions to 3 dimensions, it is important that the concept and principle chosen from the very beginning be understood by a third person looking from the outside, the continuity of the studies and the emergence of rule-based designs. The 3D basic design studies were concluded by repeating and trial and error method. The skills of creating volume with the relations between the elements and between them have been developed.

Table 1. *Student work 1*

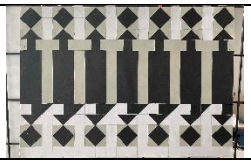
				
SAMPLE SELECTION	2D BLACK WHITE COMPOSITION	2D COLOR COMPOSITION	RELIEF STUDY	3D MODEL

Table 2. *Student work 2*

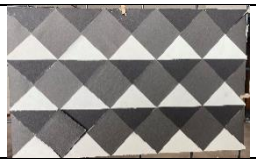
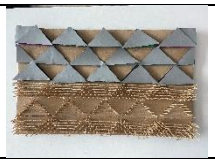
				
SAMPLE SELECTION	2D BLACK WHITE COMPOSITION	2D COLOR COMPOSITION	RELIEF STUDY	3D MODEL

Table 3. *Student work 3*

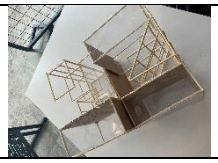
				
SAMPLE SELECTION	2D BLACK WHITE COMPOSITION	2D COLOR COMPOSITION	RELIEF STUDY	3D MODEL

Table 4. *Student work 4*

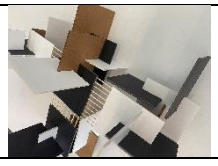
				
SAMPLE SELECTION	2D BLACK WHITE COMPOSITION	2D COLOR COMPOSITION	RELIEF STUDY	3D MODEL

Table 5. *Student work 5*

				
SAMPLE SELECTION	2D BLACK WHITE COMPOSITION	2D COLOR COMPOSITION	RELIEF STUDY	3D MODEL

Table 6. *Student work 6*

				
SAMPLE SELECTION	2D BLACK WHITE COMPOSITION	2D COLOR COMPOSITION	RELIEF STUDY	3D MODEL

Table 7. *Student work 7*

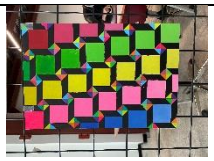
				
SAMPLE SELECTION	2D BLACK WHITE COMPOSITION	2D COLOR COMPOSITION	RELIEF STUDY	3D MODEL

Table 8. *Student work 8*

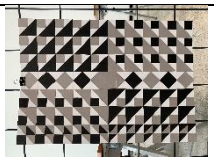
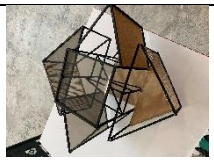
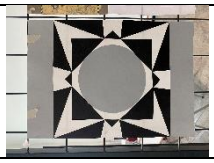
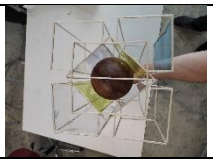
				
SAMPLE SELECTION	2D BLACK WHITE COMPOSITION	2D COLOR COMPOSITION	RELIEF STUDY	3D MODEL

Table 9. *Student work 9*

				
SAMPLE SELECTION	2D BLACK WHITE COMPOSITION	2D COLOR COMPOSITION	RELIEF STUDY	3D MODEL

This study is an exercise with a compositional and analytical method that progresses from the second dimension to the third dimension, aiming to reach an abstract concept and a concrete product again, from the beginning, which is a concrete product, in which the design principles and elements are comprehended. The suggested method and flow for the basic design course applied during a semester are shown in the table. The aim of the stages, the principles they are associated with, the materials and methods used are given in the table.

Table 10. *The suggested method and flow for the basic design course*

Stage	Aim	Principles	Materials	Method
SAMPLE SELECTION	To discuss design elements and principles through an example from painting art			theoretical lecture and discussion environment
2D BLACK WHITE COMPOSITION	To reach a concrete composition in line with basic design principles by using basic design elements through abstract concepts	Figure-Ground principle, Similarity principle, Gestalt Grouping Principles, balance, rhythm, emphasis, hierarchy, unity, contrast, proportion, alignment	black and white cardboards, pencils, glue and rulers	cut and paste method
2D COLOR COMPOSITION	to reinterpretation of black and white composition with color work using selected principles	Figure-Ground principle, Similarity principle, Gestalt Grouping Principles, balance, rhythm, emphasis, hierarchy, unity, contrast, proportion, alignment	Gouache, brushes and papers	method of painting by obtaining colors by mixing from primary colors
RELIEF STUDY	Depth-height in the transition to the 3rd dimension perception formation and experiencing different textures	Figure-Ground principle, Similarity principle, Gestalt Grouping Principles, balance, rhythm, emphasis, hierarchy, unity, contrast, proportion, alignment	corrugated cardboards, mock-up cardboards, wooden elements, rope, acetate, pencils, glue and rulers	extrude by setting a different rule for each line, surface, and color
3D MODEL	to experience volume	Figure-Ground principle, Similarity principle, Gestalt Grouping Principles, balance, rhythm, emphasis, hierarchy, unity, contrast, proportion, alignment	corrugated cardboards, mock-up cardboards, wooden elements, rope, acetate, pencils, glue and rulers	nesting and joining methods by recognizing the material and the structure

5. CONCLUSION

Basic design is an important and valid concept in the fields of architecture, art and design; it helps in teaching abstract and conceptual thinking in a coherent framework. Although there are differences between the disciplines, the principles used in the essence are common. In this study, design principles were discussed starting from the art of painting, which is a different discipline, but an analytical result was reached by placing it on the basis of the rule that should be in the field of architecture. In this way, students were provided with an easier understanding of abstract and concrete concepts and the relationship between them. The new method used can be used in traditional basic design courses, or it can be adapted to new generation designs and can be arranged in a way that allows work in the computer environment. A basic design course, shaped by following the concepts and method examined in the curriculum created with the elements and principles explained in the study, will remain up-to-date for the discipline of architecture in the future.

REFERENCES

[1] URL-1. https://www.tdk.gov.tr/ Last Accessed: 14.06.2022

[2] Bevlin, M. E., Design Through Discovery: An Introduction to Art and Design, Harcourt Brace & Company, Florida, (1994).

[3] İnan, N., Bilgisayar Destekli Tasarım Sürecinde Disiplinlerarası İlişkiler ve Disiplinlerarası Uyumlu Tasarım Olanaklarının Araştırılması, Yüksek Lisans Tezi, Gazi Üniversitesi Fen Bilimleri Enstitüsü, Ankara. s.5, (2006).

[4] Erdoğdu, G., Pelin, S., Temel Tasarım Eğitimi:(Bir Ders Planı Örneği Basic Design Education: A Course Outline Proposal). Bildiri). Doğuş Üniversitesi, Sanat ve Tasarım Fakültesi, İstanbul, 26(1), 7-19, (2016).

[5] Gökaydın, N., Eğitimde Tasarım ve Görsel Algı, Sedir Yayınevi, Ankara (1990).

[6] Günay, B., Gestalt Theory and City Planning Education, METU Journal of Faculty of Architecture, 24(1), 93-113, (2007).

[7] Özkar, M., Steino, N., Shaping design teaching: Exploring form as an agent in design reasoning and pedagogy. M. Özkar & N. Steino (Eds.), Shaping design teaching: Explorations into the teaching of form (ss 9-24), Aalborg University Press, Aalborg, (2012).

[8] Gezer, Ü., Çağdaş Sanat ve Tasarım Eğitiminde Görsel Tasarım Ögeleri ve İlkeleri, Ulakbilge, 40, s. 595-614, (2019).

[9] Atalayer, F., Temel Sanat Ögeleri, Anadolu Üniversitesi Yayınları, Eskişehir, (1994).

[10] URL-2. https://creativemarket.com/-Dotted-design-elements/ Last Accessed: 23.06.2022

[11] De Sausmarez, M., Basic Design: The Dynamics of Visual Form (2) A&C Black Publishers, London, (2001).

[12] Alexander, M., Designing The Interior Environments, Harcourt Brace, New York, (1977).

[13] Cervellini, Disegno officina della forma- tasarım II form, (2011)

[14] Edirne, J., Tasarımın Temel Prensipleri ve İç Mimari Tasarımda Uygulama Örnekleri. Yüksek Lisans Tezi, Mimar Sinan Üniversitesi Fen Bilimleri Enstitüsü, İstanbul, s:46, (2004)

[15] Kandinsky, W., Point Line to Plane, Dover Publications, New York, (1979).

[16] Klee, P., Thinking Eye, G. Wittenborn, New York, (1964).

[17] Çetinkaya, Ç., Tasarım ve kavram ilişkisinin iç mimarlık temel tasarım eğitimi kapsamındaki yeri: Farklı iki üniversite örneği üzerinden temel tasarım eğitimi üzerine bir araştırma. MS thesis. Hacettepe Üniversitesi Sosyal Bilimler Enstitüsü, Ankara (2011).

[18] Akbay, S., An Analysis of Basic Design Students' Intuitive and Analytic Attitudes in Color Decisions. Yüksek Lisans Tezi, Bilkent Üniversitesi İç Mimarlık ve Çevre Tasarımı Bölümü, Ankara, (2003)

[19] Arnheim, R., Görsel Düşünme (Çev: Rahmi Öğdül), Metis Yayıncılık, İstanbul, (2007).

[20] Lerner, F., Foundations for Design Education: Continuing the Bauhaus Vorkurs Vision. Studies in Art Education, 46(3), s. 211-226, (2005)

[21] URL-3. http://www.cg- turk.com/ Last Accessed: 26.04.2022

[22] Zöngür, O., İç Mekan Tasarımında Biçim ve Anlam Üzerine Kavramsal Bir İnceleme/ Postmodern Tasarım Yaklaşımları ve Philippe Starck. Yüksek Lisans Tezi, Hacettepe Üniversitesi Sosyal Bilimler Enstitüsü, Ankara, (2008).

[23] URL-4. https://www.vangoghmuseum.nl/en/art-and-stories/stories/5-things-you-need-to-know-about-van-goghs-self-portraits/ Last Accessed: 04.05.2022

[24] Gropius, W., Design Topics, The Magazine of Art 40, 298-304, (1947)

[25] Lang, J., Öğrenciler İçin Mimarlığa Giriş: Temel Tasarım Dersini Yeniden Düşünmek. Derleyen: N.Teymur., Aytaç Dural (Eds.), Temel Tasarım/Temel Eğitim Sempozyumu içinde, ODTÜ Mimarlık Fakültesi Yayını, Ankara (1998)

[26] Yağlı, B., Acar, A., Öğrenci Gözünden Temel Tasarım Eğitimi. Mimarlık, 293, Dosya: Temel Tasarım Eğitimi, Mimarlar Ankara Odası Şubesi, Ankara, 66-67, (2000).

[27] Tuğal, S. A., Oluşum Süreci İçinde Op Art, Hayalperest Yayınevi, İstanbul, (2012).

[28] Mennan, Z., From simple to complex configuration: Sustainability of gestalt principles of visual perception within the complexity paradigm, METU Journal of the Faculty of Architecture, (2009).

[29] Erişti, S . D., Uluuysal, B., Dindar, M. Görsel Algı Kuramlarına Dayalı Etkileşimli Bir Öğretim Ortamı Tasarımı ve Ortama İlişkin Öğrenci Görüşleri, Anadolu Journal of Educational Sciences International, 49, (2013).

[30] Ching, F. D. K., Architecture: Form, Space, and Order. John Wiley & Sons, New Jersey, (2014).

[31] Bradley, S., Design Principles: Visual Perception And The Principles Of Gestalt. Smashing Magazine, (2014).

[32] Alpan, G., Görsel Okuryazarlık ve Öğretim Teknolojisi. Yüzüncü Yıl Üniversitesi Eğitim Fakültesi Dergisi, (2008).

[33] Özsoy V., Ayaydın A., Görsel Tasarım Öge ve İlkeleri, Pegem Akademi Yayıncılık, Ankara, (2016).

[34] URL-3. https://www.designgost.com/makale/tasarimda-denge-balans-tasarim-ilkeleri Last Accessed: 18.03.2022

[35] Ertan, G., Sansarcı, E., Görsel Sanatlarda Anlam ve Algı, Yayınevi: Alternatif Yayıncılık, s:135, İstanbul, (2016).

[36] Öztuna, H. Y., Görsel iletişimde temel tasarım, Tiblan yayıncılık, (2007).

[37] Lidwell, W., Holden, K., Butler, J., Universal principles of design, revised and updated: 125 ways to enhance usability, influence perception, increase appeal, make better design decisions, and teach through design, Rockport Pub, (2003).

[38] Çellek, T., Sağocak, A. M., Temel Tasarım Sürecinde Yaratıcılık. 1. Basım, Grafik Tasarım Yayıncılık. İstanbul, (2014).

[39] Koffka, K., Introduction to: Perception: An introduction to the GestaltTheorie, (2000).