



## **The Effectiveness of a Teaching Unit Based on Achieving the Aesthetics of Balance Using Geometric and Organic Shapes to Produce Designs among a Sample of Art Education Students at the Faculty of Specific Education, Ain Shams University**

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### **Abstract :**

The effectiveness of a teaching unit based on achieving the Aesthetics of balance using geometric and organic shapes to produce designs among a sample of art education students at the Faculty of Specific Education, Ain Shams University\*

**Research problem:** The research problem is focused on the effectiveness of a teaching unit based on achieving the Aesthetics of balance using geometric and organic shapes to produce designs among a sample of art education students at the Faculty of Specific Education, Ain Shams University.

**Objectives:** To reveal the effectiveness of a teaching unit based on achieving the Aesthetics of balance using geometric and organic shapes to produce designs among a sample of art education students at the Faculty of Specific Education, Ain Shams University

**Hypotheses:** There is a positive relationship between the effectiveness of a teaching unit based on achieving the Aesthetics of balance using geometric and organic shapes and producing designs among a sample of art education students at the Faculty of Specific Education, Ain Shams University.

**Research Methodology:** The current research follows the experimental method "introductory design" with a post-measurement of the performance of the research sample.

**The research sample:** 12 male and female students from the First Division, Department of Art Education, Faculty of Specific Education, Ain Shams University.

### **The most important results:**

1. Quantitative results the percentages of arbitrators' agreement on the scale's items ranged between (90%) and (100%).

2. As for the qualitative results, they can be summarized in:

**(A)** The results of the students' work in the design subject were based on the analysis of Organic and Geometric shapes resulting from Student analysis for the design elements.

**(B)** The shapes of the spaces of the analyzed elements for each area were selected through analysis and integration of the design elements.

**Keywords** - reveal , balance, Faculty, geometric, experimental

## **Introduction:**

### **The Role of Art Education in Student Development**

Art education develops students cognitively, mentally, artistically, and physically, preparing them to be effective societal contributors. It encompasses various fields, with design being a crucial area of contemporary artistic activity. Design relies on elements like line, color, and shape, not just for aesthetic purposes but to meet human functional needs.

### **Design in Art Education**

Design is an organized effort involving a sequential and purposeful plan. It integrates elements that serve the final goal into a cohesive unit, revealing the intellectual and planning processes behind it. This approach was used by a researcher with second-year students to design using a teaching unit focused on achieving the balance using geometric and organic shapes to produce designs for a sample of art education student.

### **Key Elements of Design**

**Line, Shape, and Color:** These elements are crucial in analyzing color spaces produced by the student. The researcher manipulated these variables to explore their impact on design.

**Creative Innovation:** Design is defined as creative, innovative work that achieves its purpose. It involves various methods to convey the designer's intellectual and aesthetic message.

### **Research Focus**

The research aimed to evaluate the effectiveness of a teaching unit based on achieving the Aesthetics of balance using geometric and organic shapes to produce designs for a sample of art education students at the Faculty of Specific Education, Ain Shams University

### **Conclusion**

Art education, particularly in design, plays a significant role in developing students' creative thinking and structural understanding, making them valuable contributors to society.

### **Research Methodology:**

#### **Pre-Experimental Designs:**

Pre-experimental designs are often used in preliminary stages of research. They lack the rigorous control of variables seen in true experimental designs, which can lead to potential threats to internal validity.

#### **Exploratory Designs**

Exploratory research is used when the research problem is not clearly defined. It helps to gain insights and familiarity for later investigation. This type of research is flexible and can involve methods like literature reviews, pilot studies, case studies, focus groups, and expert opinions<sup>2</sup>. It's particularly useful for understanding underlying causes and generating hypotheses for future research.

#### **Ali Maher Khattab stated that:**

##### **Pre-Experimental Designs**

Campbell & Stanley (1966) call them preliminary experimental designs, while Lehmann & Meherens (1979), and Isaac & Michael (1981) call them exploratory designs. These designs do not adjust the variables to prevent all the impediments to inner honesty from being affected, and are therefore exploratory designs, as Jay (1992) notes.

This design may be used, for example, to study whether a new method of teaching will increase reading speed, or whether a new counseling program helps improve individuals' self-concept.

**Research Objective:**

Disclosure of the effectiveness of a teaching unit based on achieving the Aesthetics of balance using geometric and organic shapes to produce designs for a sample of art education students at the Faculty of Specific Education, Ain Shams University.

**Research hypothesis:**

There is a positive relationship between the effectiveness of a teaching unit based on achieving the Aesthetics of balance using geometric and organic shapes and producing designs for a sample of art education students at the Faculty of Specific Education, Ain Shams University.

**Research Sample:**

An intended sample of students of the First year, Department of Art Education, Faculty of Specific Education, Ain Shams University, numbering (20) male and female students, was selected to apply the proposed teaching unit, but the number of students who attended all the lessons of the unit in full (12) male and female students and their design work included in the results of the current research.

**Research Terms:****1- Teaching Unit:**

A teaching unit is a structured sequence of lessons designed to achieve a specific overarching goal. Each lesson within the unit has its own set of procedural objectives, contributing incrementally to the overall objective. By the end of the unit, all lessons collectively ensure the achievement of the general technical goal.

**2-Balance:**

Balance is the achievement of equilibrium in the overall perceived visual weight of a composition among various parts. The balance is not always achieved symmetrically. There are two general types of balance: Symmetrical and Asymmetrical. In the former, the left and right sides are mirror images of each other, whereas in the latter the two sides are not the same. To achieve balance, weight distribution should be designed to be pleasing to the eye, and visual weight should be focused on a perceived center of gravity [Preble and Preble, 1994].

**3- Organic and Geometric shape in Design:**

The use of the word 'organic' comes from 'organic chemistry,' and refers to something that has life. The term should not be misunderstood to mean a natural shape or organic form. By 'organic geometry', one refers to geometric forms that can grow and develop according to the principle of geometry, like DNA in the biological world.

Throughout the history of humankind, from the early Greeks until today, in both Western and Eastern cultures there are many examples of geometric forms whose beauty transcends time and space, such as the 'golden section.' The construction of the 'golden section' is one example showing the process of 'organic geometry' (Hu, Hung-shu, 2003).

**3- Design:**

The design painting, whether a decorative painting, advertising or otherwise, is one of the areas of design that have its importance in the field of art education, as it develops the ability to use the element and employ it through repetition and arrangement systems to achieve aesthetic values, which are the criterion for judging good artwork (Mohamed Abdel Moneim Zaki, 1996).

Mustafa Al-Razzaz mentions that decorative designs can play an important essential role in achieving educational goals - if well taught - as they develop the ability to translate the student's ideas through experimentation, which is a scientific entrance to the innovative activity to reach multiple results from one variable using design elements (Mustafa Farid Al-Razzaz, 1984).

### **Associate studies:**

These studies are commented on and the extent to which they are useful in the current research.

**First:** Studies on the effectiveness of the teaching unit in the field of art and design

1- (Engy Emile Helmy Aziz, Hamdi Mohamed Morsi, Omnia Mohamed Ibrahim, 2023)

"Using the Imaginative Teaching Strategy in Teaching Art Education to Develop Some Artistic Concepts for Preparatory School Students"

The research aims to develop some technical concepts for middle school students using the imaginative teaching strategy.

Research procedures: A theoretical framework was prepared on the imaginative teaching strategy and technical concepts, as well as research tools and materials, which included a list of technical concepts amounting to (9) concepts, a teacher's guide according to the use of the imaginative teaching strategy and testing technical concepts.

The research reached the following results: The existence of statistically significant differences at the level of significance (0.01) between the average scores of the control and experimental groups in the dimensional measurement of the total degree of testing technical concepts in favor of the experimental group where the value of "T" was equal to (39.71), which is a statistically significant value at the level of significance (0.01) and the value of the effect size (ETA squared) (0.954) and the value of the effect size (d) (8.99).

The previous study agreed with the current study in the application of a teaching unit for students to develop some technical concepts, and differed in that the current study will use the analysis of the shapes and rearranging the design element innovatively, in order to develop students' ability to analyze and process Balance in the organic and geometric shapes,

The previous study can be used in the methodology used in the application of teaching units, taking into account the different age and academic stage of students and avoiding the problems that researchers may face during the application of the teaching unit.

**2- (Yara Sayed Ibrahim Morsi, Hamdi Mohamed Morsi, Zakaria Jaber Hinnawi, 2023)**

**"The Effect of Using the Circular House Shape Strategy in Teaching Engineering to Develop Visual Thinking Skills among First Grade Preparatory Students"**

The research aimed to find out the impact of using the circular house shape strategy in teaching engineering to develop visual thinking skills among first-year middle school students in the "Engineering and Measurement" unit for the year 2022/2023.

The previous study was associated with the current study in the application of the teaching unit, but to develop visual thinking and not color analysis, as it differs from the current study also in that the current sample is a sample of students from the university and not the school, that the material is the design material in the field of art education and not engineering, and the previous study also differs from the current study in that the current study will use the analysis of the shapes and rearranging the design element innovatively, The previous study can be used to avoid the teaching problems faced by researchers during the teaching process with students or in the use of materials.

**3- (Ahmed Mustafa Abdel Aziz, 2021)**

**"A teaching unit based on the analysis of nature shapes through the engineering network to prepare design panels for a sample of art education students, Faculty of Specific Education - Ain Shams University"**

Objective: To reveal the potential of the teaching unit inspired by nature based on shape analysis through the geometric network to prepare design panels.

Research hypothesis: There is a positive relationship between teaching the teaching unit inspired by nature based on shape analysis through the geometric network and the preparation of design panels. Research Methodology: This research follows the experimental approach "semi-experimental design" where the teaching unit plays the role of the independent variable, while the design panels play the role of the dependent variable.

Research sample: 13 individuals from the third year of art education, Faculty of Specific Education, Ain Shams University.

The most important results: The teaching unit as an independent factor achieved a positive change in the behavior of the members of the research sample that appears in their ability to perceive the elements of nature and carry out operations aimed at forming an engineering network included in design panels.

The previous study agreed with the current study in the use of the teaching unit as a means of developing the skills of students at the university level, but the previous study differed in that students used elements of nature through direct drawing from nature and have used geometric grid to repeat their elements within the decorative design,

But the current study will use the analysis of the shapes and rearranging the design element innovatively to develop students' ability to applying balance analysis of shapes, and the previous study can be used to avoid the obstacles that faced the researcher during his teaching practice with undergraduate students.

## **Second: Studies on balance in the field of design**

**(LI, FEI· 2015)**

"Balance design. Research, analysis and innovation of the different types of balance design"

analysis and research on the phenomenon of balance, from the point of view of history and sociology, then focus on the design, to get a range of products as a result.

The study also shed light on tracking equilibrium throughout history as a survey and knowing the general and specific properties of equilibrium in many historical eras, and for more than one region.

The previous study differs from the current study in that the previous study is a study that specializes in tracking equilibrium as an analytical survey study, and not an applied study of the concept of equilibrium on undergraduate students. But the previous study can be used in the theoretical framework on the definition of equilibrium as a comprehensive, descriptive and analytical concept and how to benefit from it.

**(Paul J Locher a, Pieter Jan Stappers b, Kees Overbeeke b, 1998 )**

**"The role of balance as an organizing design principle underlying adults' compositional strategy for creating visual displays."**

This study had two interrelated purposes, namely, to determine if balance influences the way adults create visual displays and to subject theoretical notions of pictorial balance to experimental scrutiny. Adult volunteers made four designs, one each from circles, squares, rectangles, or leaves of different sizes. A videotape recording of the development of each design from start to completion was used to create a digitized record of its image at 10% intervals of the time taken for its completion. It was found that, regardless of element type or phase of construction, the center of a design was closely aligned with the geometric center of the pictorial field demonstrating the power of the center of a square field to function as an "anchor" or balancing point about which a design's structural skeleton is organized.

The previous study differs from the current study in that the previous study dealt with the importance of shedding light on the adequacy of using video in detecting equilibrium and digital multimedia in detecting kinetic equilibrium, and the current research differs in that it focuses on detecting equilibrium, but in the design drawings of students through their non-moving design work. It can be used by following some of the methods used from the previous study to detect equilibrium properties.

**( Locher, P., Gray, S., & Nodine, C. ,1996 )**

**“The Structural Framework of Pictorial Balance”**

Two experiments were performed to examine how the subjective balance of a painting is created by its structural features and to determine if balance influences the way people look at paintings. Stimuli consisted of sixteen reproductions of twentieth-century paintings varying in artistic style and a reconstructed less-balanced version of each. Participants in experiment 1 determined the location of the balance center of each composition, assigned ‘weights’ to the pictorial features which contributed to the location of the balance center, and rated the picture for balance. It was found that design and museum professionals and individuals untrained in the visual arts were in good agreement as to the structural framework underlying the balance organization of a painting. For all participants, disruption of the balanced organizations of the original compositions led to reliable shifts in the location of the perceived balance centers of the originals compared with their less-balanced perturbations.

The previous study differs from the current study in that the previous study is a study that explores tracking changes on samples of physiological and psychological individuals with measurement and dimensionality, to discover the changes that occur in their design artwork that is concerned with attention to balance as a result of their influence on some factors. The previous study can be used in the method of defining equilibrium and addressing it in the artworks in the study.

### **Third: Studies on organic and geometric forms in the field of design**

(Huang, Weixin, Wu, Chenglin , Huang, Jiankun, 2017)

**“A Weaving Structure for Design & Construction of Organic Geometry”**

Organic form is a kind of specific geometry significant for architectural design. Contemporary digital technology has made the design of organic form increasingly accessible, but oftentimes, the construction of such form is still rigid and expensive. Inspired by traditional handicrafts, a new weaving structure system is proposed that can be constructed by continuous bending active elastic rods. The advantage of this weaving structure system lies in its formal representation, structural performance and construction methodology. Firstly, mesh model is a common way to represent complex topology, and can be easily transformed into a weaving structure, in this way, the weaving structure can adapt to a wide range of forms. Secondly, the final form is a balance of the bending active system, thus is “organic” in its mechanism, rather than merely having organic appearance. Thirdly, the form finding process generates an evenly stressed and integrated structure system. Finally, the structure can be constructed without tedious 3D positioning works, which is far more convenient than previous construction methods for curved surfaces.

The previous study differed from the current study in that the previous study shed light on how to manipulate organic forms in organic architecture, and its importance, and that researchers in this study discovered new ways to make this architecture less expensive, and this study can be used to inspire some organic forms during the construction of organic and geometric shapes in the work of students and how to treat their design spaces.

**(Zbašnik-Senegačnik, Martina, and Manja Kitek Kuzman, 2014)**

**“INTERPRETATIONS OF ORGANIC ARCHITECTURE”**

The notion of organic architecture originally sprung from the ideas of Violletle- Duc and Ruskin, which influenced Wright and Gaudf. The second interpretation of organic architecture is based on mathematic and geometric laws that originate in nature. According to the third interpretation, organic architecture finds inspiration in nature and emulates the shapes of living organisms.

The previous study differs from the current study in that the previous study shed light in a theoretical way on what is the importance of organic architecture and what is its concept, it is a survey study that describes architecture and analyzes some models of that architecture and how to simulate some living

organisms, and can benefit from the current study in how to benefit from some architectural works and designs in the formation of design machines for some artworks in the current research

**(Latham, W., Shaw, M., Todd, S., Leymarie, F.F., Jefferys, B., Kelley, L. 2008)**

**“Using DNA to Generate 3D Organic Art Forms”**

A novel biological software approach to define and evolve 3D computer art forms is described based on a re-implementation of the FormGrow system produced by Latham and Todd at IBM in the early 1990's. This original work is extended by using DNA sequences as the input to generate complex organic-like forms. The translation of the DNA data to 3D graphic form is performed by two contrasting processes, one intuitive and one informed by the biochemistry. The former involves the development of novel, but simple, look-up tables to generate a code list of functions such as the twisting, bending, stacking, and scaling and their associated parametric values such as angle and scale. The latter involves an analysis of the biochemical properties of the proteins encoded by genes in DNA, which are used to control the parameters of a fixed FormGrow structure. The resulting 3D data sets are then rendered using conventional techniques to create visually appealing art forms. The system maps DNA data into an alternative multi-dimensional space with strong graphic visual features such as intricate branching structures and complex folding. The potential use in scientific visualisation is illustrated by two examples. Forms representing the sickle cell anaemia mutation demonstrate how a point mutation can have a dramatic effect. An animation illustrating the divergent evolution of two proteins with a common ancestor provides a compelling view of an evolutionary process lost in millions of years of natural history.

The previous study differs from the current study in that the previous study used DNA to inspire new three-dimensional drawings as a kind of departure from the traditional models in the creation of three-dimensional bodies. The previous study on how to inspire new bodies can be used to build organic shapes in the designs of existing students.

**(Hu, Hung-shu, 2003)**

**“Organic Geometry – A Rationale to Create a Form”**

This paper will introduce a new method ‘organic geometry’ which will help anyone, despite his artistic ability, to be able to create strong design work. This paper’s purpose is to help one to learn and understand three basic shapes, the closeness of the relationships of these shapes, and by using one of these three shapes, proceeding with geometric principles to create new forms. This is a simple method to create a form in a rational way.

The previous study differs from the current study in that the previous study in which the researcher interpreted what is the organic form and what is the difference between the organic form and the geometric shape from a philosophical point of view.

The previous study can be used in how to teach and explain the concept of organic and geometric form to students while performing their practical performance.

**(Christopher, Gregory, 1994 )**

**“Sculptural inquiry into geometric and organic forms”**

In this research the researcher manipulated simple geometric shapes to construct organic forms using transparent planes, created areas, and implied volumes. The sculpture, which was influenced by my interest in the Renaissance, Russian Constructivism, and the Minimalists, can best be divided into five series; each series is identified by a physical and a conceptual change of ideas.

The previous study differs from the current study in that the previous study created three-dimensional sculptures to create works of art using simple geometric shapes to create simple organic shapes and using levels. The previous study can be used to use how to deal with simple geometric shapes and how to address them to comply with organic shapes in the same design.

### **The procedural aspect of the research:**

The procedural aspect of the research deals with the steps followed by the researcher to reach the design of the teaching unit among a sample of first-year students , Department of Art Education, Faculty of Specific Education, Ain Shams University, which is entitled A teaching unit based on the effectiveness of a teaching unit based on achieving the Aesthetics of balance using geometric and organic shapes to produce designs for a sample of art education students at the Faculty of Specific Education, Ain Shams University.

### **The researcher followed these steps:**

- 1- Training is conducted on how to use design elements (as in this academic year is the student's first interaction with design elements and students have not previously dealt with them before).
- 2- Training is conducted on how to distribute the design elements within the spaces and how to distribute the tone, which is the extent of the amount of light and dark, and how to achieve balance by distributing these elements in the design, to train the student on how to solve the problems they will face during the grading and how he will be able to find proportional shifts during the grading process.
- 3- Realizing what equilibrium is, what are its types, what its usefulness is, and how to use it, where students conducted small-sized design experiments as prototypes as training on how to use design elements.
- 4- Then the student applied what was trained in the experiment lesson, where he made prototypes on how to build geometric and organic spaces in design, but they are empty spaces
- 5- The empty geometric and organic spaces created by the students were used in that the students placed some textures inside them using also design elements.
- 6- Then the students finish its design on a painting of white lottery material in an outdoor space of 1/8 sheet, and an interior of 35×35 cm. It insulates the margin around the design to preserve it, and the elements and spaces are selected according to the rules and foundations of the design throughout the painting. Considering also highlighting the shadows, light and gloomy,

Through the previous presentation, we can reach the lessons of the teaching unit, which depends on the application of equilibrium as a basis of design on configurations of design elements and the production of new designs.

### **The general objective of the teaching unit:**

Producing a set of designs based on achieving equilibrium properties and applying them to design elements to extract ideas for those designs through it.

### **Teaching Unit:**

- (1) Philosophy of the teaching unit:** The philosophy of the teaching unit means clarifying the main ideas that guide the teaching unit and determine its paths to achieve the goal for which the teaching unit was established, which crystallized in the basic problem, which is the preparation of design panels for the study sample.

It is within the philosophy of the teaching unit to rely on the design course for the first year of art education (Faculty of Specific Education - Ain Shams University), and the philosophy of the teaching unit depends on the ability to form ideas, the ability to use materials, and the ability to respond well to visual effects.

- (2) Objectives of the teaching unit:** Among the objectives of the teaching unit is the ability to reformulate shapes innovatively, and the ability to form designs taking into account the foundations of design, especially balance.

**(3) The content of the teaching unit:** The teaching unit contains four lessons, which are presented below so that the presentation of these lessons is accompanied by samples of the results reached by the research sample.

**The sequence of lessons came as follows:**

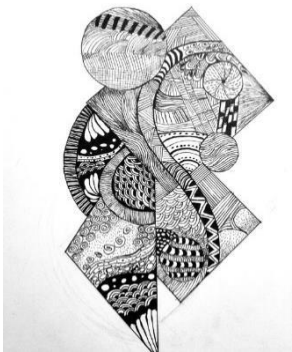
#### Lesson one

|                                                                                                                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                         |                                                                                                       |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------|-------------------------------------------------------------------------------------------------------|
| Subject                                                                                                                                                                              | Explain what design is and basics of what are the design elements                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                         |                                                                                                       |
| Domain                                                                                                                                                                               | design                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                         |                                                                                                       |
| Time                                                                                                                                                                                 | Lecture (3 hours) in the first week                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                         |                                                                                                       |
| Age Group                                                                                                                                                                            | First Year (18-20 Years)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                         |                                                                                                       |
| Teaching aids                                                                                                                                                                        | Materials & Tools                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Basic concepts                          | Goals                                                                                                 |
| <p>Pictures of some of the artists' works</p> <p>Photos of some models of nature as an example of design inspiration</p> <p>Identify some terms in local and foreign expression.</p> | <p>Sketch pencil</p> <p>Ballpoint pens</p> <p>Ruler</p> <p>Aristotle's Triangle</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | <p>Balance</p> <p>Line</p> <p>Point</p> | <p>- Reworks design elements</p> <p>- Be able to analyze initial forms.</p> <p>- Maintain texture</p> |
| Strategy used                                                                                                                                                                        | Lesson Progress                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                         |                                                                                                       |
| Brainstorming                                                                                                                                                                        | <p>At the beginning of the lecture, the researcher throws some interesting questions to motivate students to the topic of the current lesson through brainstorming.</p> <p>A general explanation is made of what design is and what are the basic concepts and elements of design.</p> <p>Then what calligraphy is explained as an element of design, by displaying the works of some artists.</p> <p>The types of baselines and how to formulate them are presented and explained from the perspective of equilibrium.</p> <p>Some terms for equilibrium are explained.</p> <p>Each student is required to apply equilibrium in the sketch of the design material by implementing it through the line and Point elements.</p> |                                         |                                                                                                       |
| It occurs whenever the student issues a desired behavior, and the reinforcement will be material and moral                                                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                         | Strengthening                                                                                         |
| What difficulties did the student face while doing the lesson and how to overcome them                                                                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                         | Correction                                                                                            |

#### Lesson Four

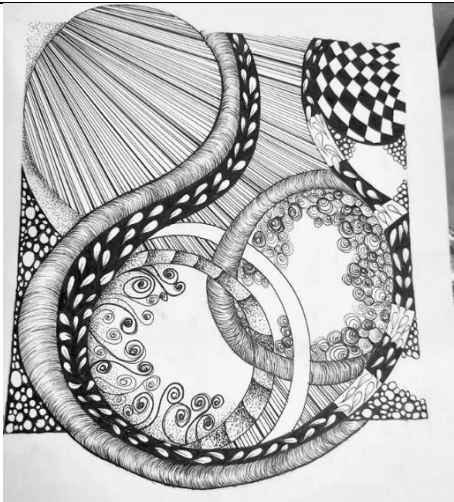
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|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------|
| Subject                                                                                                                                                               | Explain what design is and basics of what are the design elements |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                                  |
| Domain                                                                                                                                                                | design                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                                  |
| Time                                                                                                                                                                  | Lecture (3 hours) in the first week                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                                  |
| Age Group                                                                                                                                                             | First Year (18-20 Years)                                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                                  |
| Teaching aids                                                                                                                                                         | Materials & Tools                                                 | Basic concepts                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Goals                                                                            |
| Pictures of some of the artists' works<br>Photos of some models of nature as an example of design inspiration<br>Identify some terms in local and foreign expression. | Sketch pencil<br>Ballpoint pens<br>Ruler<br>Aristotle's Triangle  | Balance<br>Line<br>Point                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Reworks design elements<br>Be able to analyze initial forms.<br>Maintain texture |
| Strategy used                                                                                                                                                         |                                                                   | Lesson Progress                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                                  |
| Brainstorming                                                                                                                                                         |                                                                   | At the beginning of the lecture, the researcher throws some interesting questions to motivate students to the topic of the current lesson through brainstorming.<br>A general explanation is made of what design is and what are the basic concepts and elements of design.<br>Then what calligraphy is explained as an element of design, by displaying the works of some artists.<br>The types of baselines and how to formulate them are presented and explained from the perspective of equilibrium.<br>Some terms for equilibrium are explained.<br>Each student is required to apply equilibrium in the sketch of the design material by implementing it through the line and Point elements. |                                                                                  |
| It occurs whenever the student issues a desired behavior, and the reinforcement will be material and moral                                                            |                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Strengthening                                                                    |
| What difficulties did the student face while doing the lesson and how to overcome them                                                                                |                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Correction                                                                       |

### Teaching unit results

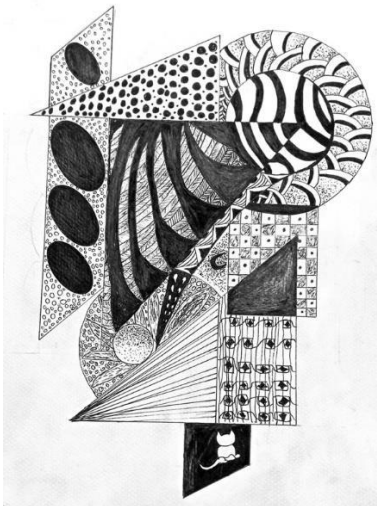
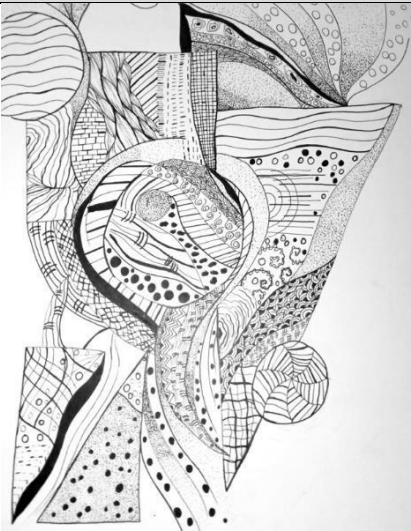
| Final Design Art                                                                   | N | Final Design Art                                                                    | N |
|------------------------------------------------------------------------------------|---|-------------------------------------------------------------------------------------|---|
|   | 2 |   | 1 |
|  | 4 |  | 3 |

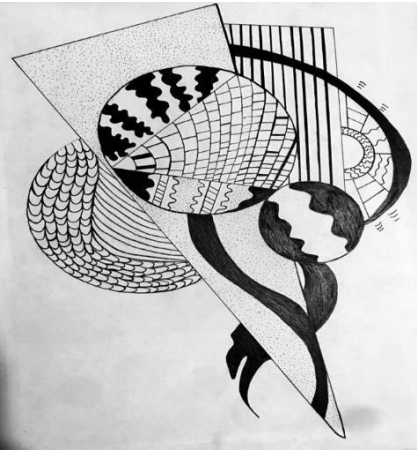
### Teaching unit results

| Final Design Art                                                                    | M | Final Design Art                                                                     | M |
|-------------------------------------------------------------------------------------|---|--------------------------------------------------------------------------------------|---|
|  | 6 |  | 5 |

|                                                                                   |   |                                                                                    |   |
|-----------------------------------------------------------------------------------|---|------------------------------------------------------------------------------------|---|
|  | 8 |  | 7 |
|-----------------------------------------------------------------------------------|---|------------------------------------------------------------------------------------|---|

### Teaching unit results

| Final Design Art                                                                   | M  | Final Design Art                                                                    | M |
|------------------------------------------------------------------------------------|----|-------------------------------------------------------------------------------------|---|
|  | 10 |  | 9 |

|                                                                                   |    |                                                                                    |    |
|-----------------------------------------------------------------------------------|----|------------------------------------------------------------------------------------|----|
|  | 12 |  | 11 |
|-----------------------------------------------------------------------------------|----|------------------------------------------------------------------------------------|----|

| Teaching unit results Comment                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Balance</b>                                                               | The students used balance by taking into account the distribution of the four design elements in the spaces they created through the manipulation of geometric and organic spaces, and the elements were distributed in the initial spaces taking into account the balance in the distribution of each design element by analyzing the areas consistent with the context of the composition of each painting for students separately |
| <b>Point</b>                                                                 | Very few students used the dot element during the implementation of their design paintings, but they inserted it while merging it with the contactor, and one student, student No. (1), used it because he wanted to show depth in some of its spaces.                                                                                                                                                                               |
| <b>Line</b>                                                                  | The students used the calligraphy element in all their work, with the types of geometric lines and the organic line, but the zigzag line was not used by the students significantly, while the straight geometric line and the organic line are the two most types that students used in their designs                                                                                                                               |
| <b>Shape</b>                                                                 | The students used geometric and organic spaces, they used regular and irregular geometric spaces, and also introduced organic spaces with geometric spaces in a harmonious manner, whether in the construction of paintings or within the treatment of shape areas.                                                                                                                                                                  |
| <b>Texture</b>                                                               | The contact varied between the real and realistic touches in our daily lives, and the unrealistic touches that are inspired by the imagination of the students, and the students took into account the gloom and openness in the distribution of their touches significantly. Which resulted in most paintings showing some depth in the designs                                                                                     |
| (Numbers 1-12 symbolize the number of 12 Students of the 20-research sample) |                                                                                                                                                                                                                                                                                                                                                                                                                                      |

### Design Art's Information

| Student Number | Student Name                    | Ink pen size | Colors used     | Material           | Work Size | Design principles | Design element              | Design Printing   |
|----------------|---------------------------------|--------------|-----------------|--------------------|-----------|-------------------|-----------------------------|-------------------|
| 1              | Hoda Saeed Abdul razek          | 2/4/6        | Black and white | Canson paper 300gm | 35x35cm   | Balance           | Point, line, shape, texture | transparent paper |
| 2              | May Allah bless him Amr Ramadan | 2/4/6        | Black and white | Canson paper 300gm | 35x35cm   | Balance           | Point, line, shape, texture | transparent paper |
| 3              | Shahed Ahmed Ramadan Suleiman   | 2/4/6        | Black and white | Canson paper 300gm | 35x35cm   | Balance           | Point, line, shape, texture | transparent paper |
| 4              | Alaa Mohamed Tawfiq             | 2/4/6        | Black and white | Canson paper 300gm | 35x35cm   | Balance           | Point, line, shape, texture | transparent paper |
| 5              | Rana Saeed Ibrahim              | 2/4/6        | Black and white | Canson paper 300gm | 35x35cm   | Balance           | Point, line, shape, texture | transparent paper |
| 6              | Iman Ahmad Muhammad             | 2/4/6        | Black and white | Canson paper 300gm | 35x35cm   | Balance           | Point, line, shape, texture | transparent paper |
| 7              | Aya Faris Al , Sayed            | 2/4/6        | Black and white | Canson paper 300gm | 35x35cm   | Balance           | Point, line, shape, texture | transparent paper |
| 8              | Ayatollah Ahmed Sadat           | 2/4/6        | Black and white | Canson paper 300gm | 35x35cm   | Balance           | Point, line, shape, texture | transparent paper |
| 9              | Bismillah Muhammad Hassan       | 2/4/6        | Black and white | Canson paper 300gm | 35x35cm   | Balance           | Point, line, shape, texture | transparent paper |
| 10             | Mustafa Alsayed Mahdi           | 2/4/6        | Black and white | Canson paper 300gm | 35x35cm   | Balance           | Point, line, shape, texture | transparent paper |
| 11             | Malak                           | 2/4/6        | Black           | Canson             | 35x35cm   | Balance           | Point,                      | transparent       |

|    |                      |       |                 |                    |         |         |                             |                   |
|----|----------------------|-------|-----------------|--------------------|---------|---------|-----------------------------|-------------------|
|    | Ahmed Nasr           |       | and white       | paper 300gm        |         |         | line, shape, texture        | paper             |
| 12 | Rawan Muhammad Saher | 2/4/6 | Black and white | Canson paper 300gm | 35x35cm | Balance | Point, line, shape, texture | transparent paper |

## Results and Recommendations

The results were presented to a committee of arbitrators\* in the exact specialization, to answer the questions \*\* A scale consisting of (6) questions revolving around the availability of six characteristics and the answer was (yes) or (no) and the following is a presentation of the ratios of the arbitrators' agreement on the availability of the six characteristics.

### Quantitative results

1. The judges agreed 100% on the availability of the property "that the teaching unit as an independent variable brought about a positive change in the behavior of the members of the research sample, which was reflected in their ability to reformulate the Shapes included in the design panels."
2. The judges agreed 88% on the availability of the property "that the members of the research sample were able to formulate the shapes in an innovative way."
3. The judges agreed 94% on the availability of the property "that the sample members are able to form compatible geometric and organic design shapes."
4. The judges agreed 91% on the availability of the property "that the subjects are able to achieve superposition through shapes."
5. The judges agreed 92% on the availability of the property "that the sample members are able to achieve the analysis of design shapes".
6. The judges agreed 92% on the availability of the feature "Achieving the foundations of building the design panel".

### Results How to:

1. The results of the students' work in the design subject were based on the formal analysis of the shapes with the use of vertical, horizontal, and inclined axes to build the design panel.
2. The shapes of the spaces of the analyzed elements for each area were selected through analysis and integration of the design elements..
3. The numbers from 1 to 12 symbolize the number of 12 members of the research sample (the 20 individuals).

### Recommendations:

In light of the results of the current study, the researcher made a number of recommendations and suggestions that may be useful in the field of design.

1. The researcher recommends making more teaching units in various other fields.

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\* See research appendices.

\*\* See research appendices.

2. The researcher recommends in-depth technical knowledge closely because of its stock that develops the visual aspect for students to draw inspiration from many designs that enrich the field of design.
3. Opening channels of communication between all artistic fields can lead to new artistic creations with an innovative aspect and expand the perceptions of art teachers and students.
4. The results of the current research can be employed in future research that uses computer programs in design formulations.
5. Allow students to experiment to analyze three- and two-dimensional geometric shapes.
6. The need to deal with basic geometric shapes, for example, circle, triangle and square to reveal a lot of solutions that are not without design.

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