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The Effectiveness of a Teaching Unit Based on Achieving the Characteristics of Color Compatibility on the Shapes Resulting from the Midjourney Program 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 characteristics of color compatibility on the shapes resulting from the Midjourney program to produce designs among a sample of art education students at the Faculty of Specific Education, Ain Shams University*

Research problem: The effectiveness of a teaching unit based on achieving the characteristics of color compatibility on the shapes resulting from the Midjourney program to produce designs among a sample of art education students at the Faculty of Specific Education, Ain Shams University.

Objectives: Disclosure of the effectiveness of an teaching unit based on the effectiveness of an teaching unit based on achieving the characteristics of the color compatibility on the forms resulting from the Midjourney program to produce designs at a sample of artistic education students at the Faculty of Specific Education, Ain Shams University

Hypothesis: There is a positive relationship between achievement Compatibility properties Chromatography on shapes resulting from the Midjourney program and the production of designs for 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 second 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 work of students on the subject of design have been based on the achievement of the rules of color compatibility on the elements resulting from the Midjourney.

(B) The colors of the element and the spaces that were analyzed for each surface were chosen through the compatible colors rule.

Keywords – achieving, effectiveness , production, performance, agreement
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1. Introduction:

Art education develops the student and elevates him in terms of the cognitive, mental, artistic and physical aspects to reach him to the maximum levels of preparations for him and then direct them to make him an effective force in society.

Art education includes many fields, and the field of design is one of the main and important areas of artistic activity and contemporary life and depends in its composition on the elements of formation such as line, color and shape and does not stop on aesthetic relations only, but rather employs these elements to achieve the goals of human needs in terms of function and life.

Design can be defined as an organized effort for a sequential and purposeful plan in which the elements that serve the final goal of the design are grouped into an integrated unit, and reveal the sequence and sequence of intellectual and planning processes of the design together, which helps to identify the foundations on which it was built and the stages that the design went through until it reached its final form, and this is what the researcher followed with the students of the second year in designing the painting through the effectiveness of a teaching unit based on achieving compatibility characteristics Chromatography on the resulting shapes of the Midjourney program for the production of designs.

Design includes all aspects of activity that include all aspects of modern life, it is an essential work of man, and the design process is defined as the creative innovative work that achieves its purpose.

There are many methods that the designer can follow to achieve these design foundations and deliver his intellectual and aesthetic message performed by the designer's artwork.

The researcher used in the current research and through the teaching unit with the students of the second year elements of design such as line, area and color in the analysis of color spaces that were produced through the Medjurni program, so a number of these variables were installed and the other was unleashed, and the researcher believes that the field of design has the greatest burden to provide students with the structural foundations of design, which serves as the basis for supporting the structural system in the creative thinking of the student, hence the problem of research is concentrated in The effectiveness of a teaching unit based on achieving the characteristics of color compatibility on the shapes resulting from the Midjourney program to produce designs among a sample of art education students at the Faculty of Specific Education, Ain Shams University.

Second: Research Methodology:

The current research follows the experimental approach "preliminary design" with dimensional measurement of the performance of the research sample, Ali Maher Khattab stated that:

Pre-Experimental Designs

It is called Campbell and Stanley (1966). Campell & Stanley with preliminary experimental designs, while it is called by Lahman and Mehrens (1989) Lehmann & Meherens Isaack and Michael (1981) God willing & Michael with 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.

Third: Research Objective:

Disclosure of the effectiveness of a teaching unit based on the effectiveness of an investigation-based teaching unit Compatibility properties Chromatic on the shapes resulting from the Midjourney program to produce designs among a sample of art education students at the Faculty of Specific Education, Ain Shams University.

Fourth: Research Hypothesis:

There is a positive relationship between achievement Compatibility properties Chromatography on shapes resulting from the Midjourney program and the production of designs for a sample of art education students at the Faculty of Specific Education, Ain Shams University

Fifth: Research Sample:

An intended sample of students of the second year, Department of Art Education, Faculty of Specific Education, Ain Shams University, was selected and numbered (20) male and female students 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.

Sixth: Research Terms:

1- Teaching Unit:

A teaching unit is a sequential series of lessons aimed at achieving a specific general technical goal and each lesson contains a set of procedural objectives to be achieved. Each lesson at the end of it has achieved part of the overall objective until the lessons of unity are completed.

2- Color compatibility:

The procedural definition followed by the researcher is the analysis of the form through the design elements in the light of the design foundations to reach the process of color harmony.

3- Midjourney Artificial Intelligence Program:

Midjourney is an independent research lab exploring new mediums of thought and expanding the imaginative powers of the human species.

Midjourney is a generative software system capable of creating digital images based on entered text parameters, developed on the basis of the highlevel programming lan guage Phyton by a team of programmers led by David Holz. (Walker A, 2022), As Kuhlman D says that Midjourney is a generic tool and similarly developed: DALL-E, NightCafe, Wombo Dream or Latent Majesty Diffusion can generate digital images with high aesthetics based on text output or a web link to a digital image.(Kuhlman D, 2009).

4- Design Art:

The design painting, whether a decorative painting, advertising or otherwise, is one of the areas of design that have 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 that are the criterion for judging good artwork.

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 innovative activity to reach multiple results from one variable using design elements.

Seventh: Associated 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 computer programs based on artificial intelligence technology, in order to develop students' ability to analyze and process color spaces in the shapes resulting from the program,

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 artificial intelligence programs, 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 Geometric Grid 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 networks to repeat their elements within the decorative painting,

But the current study will use artificial intelligence programs to develop students' ability to color analysis of spaces, 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 the characteristics of color compatibility in the field of design

1- (Heming Zhang, Xuewen Yang, Jianchao Tan, Chi-Hao Wu, Jue Wang, C.-C. Jai Kuo, 2020)

"Learning Color Compatibility in Fashion Outfits"

Color compatibility is important for evaluating the compatibility of a fashion outfit, yet it was neglected in previous studies. We bring this important problem to researchers' attention and present a compatibility learning framework as solution to various fashion tasks. The framework consists of a novel way to model outfit compatibility and an innovative learning scheme. Extensive experimental results verify the importance of color compatibility alone with the effectiveness of our framework. With color information alone, our model's performance is already comparable to previous methods that use deep image features.
The previous study differs from the current study in that the previous study dealt with the importance of shedding light on the importance of color compatibility and its characteristics in the field of fashion design, and the extent of its impact on the general form of designs, the previous study can be used to draw inspiration from some of the color relationships that researchers addressed in color compatibility and how to address and analyze them in their design work.

2- (Shiguang Liu, Yaxi Jiang, and Huarong Luo, 2018)

"Attention-aware color theme extraction for fabric images"

Color configuration plays an important role in art, design, and communication, which can influence the user's experiences, feelings, and psychological well-being. It is laborious to manually select a color theme from scratch for handling large batches of images. Alternatively, it can inspire designers' creations and save their time as well by leveraging the color themes in existing art works (e.g. fabric, paintings). This paper presents a new automatic framework for extracting color themes from fabric images. Experiments show that our method is more efficient and can generate more visually plausible results than state-of-the-art algorithms.
The previous study differs from the current study in that the previous study is a study concerned with the application of compatible colors on fabrics and how those colors affect different types of fabrics and different materials, and the current study can be used to inspire innovative ways of achieving color compatibility by integrating color gradations.

3- (Jean-Francois Lalonde; Alexei A. Efros, 2007)

"Using Color Compatibility for Assessing Image Realism"

Why does placing an object from one photograph into another often makes the colors of that object suddenly look wrong? One possibility is that humans prefer distributions of colors that are often found in nature. In this paper, we explore some of these issues by studying the color statistics of a large dataset of natural images, and by looking at differences in color distribution in realistic and unrealistic images. We apply our findings to two problems: 1) classifying composite images into realistic vs. non-realistic, and 2) recoloring image regions for realistic compositing.

The previous study differs from the current study in that the previous study is a survey of some selected works by artists, and not for a teaching research experiment, where the researchers applied it to a sample of individuals as is the current research, and the current research can be used to inspire some methods during the recoloring of space analysis to obtain color harmonies.

Third: Studies on the relationship of artificial intelligence in the field of art and design

1- (James Hutson, Martin Lang, 2023)

"Content creation or interpolation: AI generative digital art in the classroom"

This study introduced students in a digital art course to Craiyon and Midjourney generative AI tools, with DALL-E 2 selected as the primary tool due to its varied output. To explore the potential of AI tools in creative practice, The students were tasked with selecting a preferred prompt from one tool and then reproducing the output from both tools. The results revealed significant variations in replicating the outputs of different AI tools and limited exploration of prompt engineering, leading to restrictions in the iterative process of artmaking. The students agreed that generative AI tools are not a substitute for human creativity and should be used for final projects. The study demonstrates the potential and

limitations of integrating AI tools in art and design and suggests the need for further research in developing effective prompt engineering strategies.

The previous study differs from the current study in that the previous study in which the researcher tested the MedJournal program only and for the purpose of discovering that this program is just a collapse of some programming processes that repeat themselves with several attempts and that it is indispensable for the creative aspect of the artist, and without students creating paintings and analyzing, drawing or coloring.

You can benefit from the previous study in how to teach and explain the program to students, and to know what problems students faced during the practice of the program to avoid them during the current study

2- (Ahmad Faisal Choiril Anam Fathoni, 2023)

"Leveraging Generative AI Solutions in Art and Design Education: Bridging Sustainable Creativity and Fostering Academic Integrity for Innovative Society"

This article examines how generative AI solutions, such as text-to-image generators, can help students create innovative and sustainable designs while promoting academic integrity. The article shows how AI in art and design education can equip students with the skills and knowledge to succeed in a rapidly changing digital landscape. This research uses a qualitative method by analyzing the apps and literature reviews in journals and documents related to the problems studied. Case studies show how AI-based solutions can help students create innovative and sustainable designs while promoting academic integrity. Integrating controlled AI- based approaches in art and design education can promote academic integrity, creativity, and sustainability. AI-based art and design education solutions may help society become more innovative and sustainable. This article concludes that art and design educators must embrace AI-based solutions to prepare students for a rapidly changing digital world.

The previous study differs from the current study in that the previous study in which the researcher delivered some notes and theoretical instructions only in his research and without any practical performance of the students or the presentation of any paintings or artistic results for them, so the research was just instructions for future researchers and art education teachers.

The previous study can be used in the possibility of following the theoretical general guidelines in benefiting from them during the creation of the lessons of the current teaching unit, what can be followed while teaching artificial intelligence and what should be avoided as well.

3- (ZIV EPSTEIN, AARON HERTZMANN, AND THE INVESTIGATORS OF HUMAN CREATIVITY 2023)

"Art and the science of generative AI"

The capabilities of a new class of tools, colloquially known as generative artificial intelligence (AI), is a topic of much debate. One prominent application thus far is the production of high-quality artistic media for visual arts, concept art, music, and literature, as well as video and animation. For example, diffusion models can synthesize high-quality images (1), and large language models (LLMs) can produce sensible-sounding and impressive prose and verse in a wide range of contexts (2). The generative capabilities of these tools are likely to fundamentally alter the creative processes by which creators formulate ideas and put them into production. As creativity is reimagined, so too may be many sectors of society. Understanding the impact of generative AI—and making policy decisions around it—requires new interdisciplinary scientific inquiry into culture, economics, law, algorithms, and the interaction of technology and creativity**.**

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 artificial intelligence in general in its impact on aspects of life and how it can change its pattern and what its harms, and the previous study can be used to follow what the potential of artificial intelligence in areas such as art and what are its harms in order to avoid them in the field of art

4- (Harry Jiang, Lauren Brown, Jessica Cheng and other, 2023)

"AI Art and its Impact on Artists"

The last 3 years have resulted in machine learning (ML)-based image generators with the ability to output consistently higher quality images based on natural language prompts as inputs. As a result, many popular commercial "generative AI Art" products have entered the market, making generative AI an estimated $48B industry [125]. However, many professional artists have spoken up about the harms they have experienced due to the proliferation of large-scale image generators trained on image/text pairs from the Internet. In this paper, we review some of these harms which include reputational damage, economic loss, plagiarism, and copy- right infringement. To guard against these issues while reaping the potential benefits of image generators, we provide recommendations such as regulation that forces organizations to disclose their training data, and tools that help artists prevent using their content as training data without their consent**.**

The previous study differs from the current study in that the previous study shed light on the negative side and the harms of artificial intelligence in the field of art in general and on artists in terms of intellectual property for artists and other important matters and how to avoid those abuses that appeared after the publication of artificial intelligence applications, and the previous study can be used to avoid those damages and abuses that can be explained to students in order to avoid them and not to delve into them so as not to fall under such things.

5- (Lugrin, Cavazza, Crooks, & Palmer, 2006)

"Artificial Intelligence-Mediated Interaction in Virtual Reality Art"

In entertainment applications, artificial intelligence techniques have most often been used to implement embodied agents or to automatically generate artistic content. A more recent development concerns using AI to support the user experience through new AI-based interactivity techniques. This is especially of interest for the development of artistic installations based on interactive 3D worlds. The starting point of this research was to facilitate the description of high-level behaviors for virtual worlds that would form part of virtual reality (VR) art installations. In our approach to interactivity, the consequences of user interaction can be dynamically computed to produce cascaded effects eliciting a specific kind of user experience. This chain of events is computed from first principles embedding elements of the artistic brief.

The previous study differs from the current study in that the previous study uses virtual reality technology with the help of artificial intelligence in creating three-dimensional elements in order to enhance virtual reality as a type of art, and this study can be used to draw inspiration from some of the steps that researchers used while using the characteristics of artificial intelligence programs in their research experience.

Eighth: 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 second-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 characteristics of color compatibility on the shapes resulting from the Midjourney program for the production of designs.

The researcher followed these steps:

1- Training is carried out on the primary and secondary color circle and the texture of the color in the mixture (as in this academic year is the student's first deal with color and students have never dealt with color before that).

2- Training is carried out on color grading and how to control color levels and gradation, while retaining the appropriate color texture in the training application. This is done through the gradation of a primary color with primary, a primary color with a secondary, a primary or secondary color with a neutral color, either black or white, and how to access the sub-colors during the grading process, where the training was on the first page of the training to scale a primary color with another primary and then a fourth rectangle that scales a color he chooses with a color Neutral. The next page is a secondary color with

another secondary color in order to access the sub-colors, to train the student on how to solve the problems he will face during the staging and how he will be able to find proportional shifts during the grading process.

3- Understanding what artificial intelligence is, what is the Midjourney program, its usefulness, and how to use it, as students produced the largest possible number of program results by entering specific, accurate and brief keywords for the program, the more the keywords were close to the topic, the closer the results were to the subject of the teaching unit, and then the results were presented for examination, in terms of what will be close to the topic and what is far from the subject of the teaching unit. The closest to the subject and the closest to the goal of the teaching unit is chosen.

4- Then the student applied what was trained in the lesson of learning color grading by treating the areas resulting from the process of analyzing the color areas of the results obtained from the Midjourney program. Which will also qualify him later to perceive compatible colors.

5- Building an auxiliary network in the design panel to start drawing the resulting painting from the Midjourney program, but with the reprocessing of colors in order to put an entity for the student's fingerprint inside his painting, and to develop a font type and areas in line with the difference in those shapes, while highlighting the treatment of color spaces in a way that is in line with the subject of the painting.

6- The student transfers the reticulates and processes the topics he designed on transparent paper on the design board with white nasibian material in an outdoor space of 1/8 sheet, and an interior of 25×35 cm. It isolates the margin around the design to preserve it, and the colors for the elements and spaces are chosen according to the compatible color rules throughout the painting. For example, the implementation of human skin is through processing it with compatible colors for skin color, and the colors are placed within the spaces that were treated in the previous stage, taking into account Also highlight the shadows, light and gloomy,

Through the previous presentation, we can reach the (lessons) of the teaching unit, which depends on the application of the color grading process to configurations that have been used by an artificial intelligence program (Midjourney) to extract ideas for those designs through it.

Ninth: The general objective of the teaching unit:

Producing a set of designs based on achieving color compatibility properties on elements that were used by an artificial intelligence program (Midjourney) to extract ideas for those designs through it.

Tenth: 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 second year of art education (Faculty of Specific Education - Ain Shams University), and the use of auxiliary networks, 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 a color groupthatis not compatible with taking into account the foundations of design.

(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 following are examples of the results of the first lesson:

Lesson one

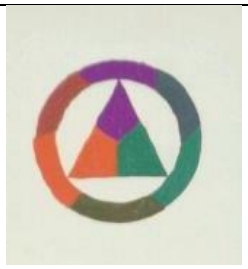
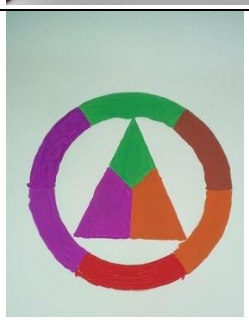
Subject	explain what color is and practice drawing the basic color circle (Training 1)
Domain	design
Time	Lecture (3 hours) in the first week
Age Group	Second Year (18-20 years)

Teaching aids	Materials & Tools	Basic concepts	Goals
- Pictures of the color theory of Isaac Newton, - Pictures of color circles and their types (subtraction, association, and the difference between them) - Identify some terms in Arabic and foreign color	- Sketch - pencil - Gouache colors - Ruler - Aristotle's Triangle	- Proportion and proportionality - Color	- Recreates direct colors. - Be able to analyze color. - Maintain color 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. - A general explanation is made of what design is and what are the basic concepts and elements of design. - Then what color is explained as an element of design, by displaying the works of some artists.

	- The basic color circle is presented and explained, how the color circle model developed and how Isaac Newton came up with it. - Some color-specific terms are explained. - Each student is required to apply the color circle in the sketch of the design material by implementing it in gouache colors.
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

Samples of the results of the third lesson

Item	N	Item	N	Item	N	Item	N
	4		3		2		1
	8		7		6		5
	12		11		10		9

Lesson Two

<table>
<tr><td>Subject</td><td colspan="3">Color Staging Training (Training 3)</td></tr>
<tr><td>Domain</td><td colspan="3">design</td></tr>
<tr><td>Time</td><td colspan="3">Lecture (3 hours) in the third and fourth week</td></tr>
<tr><td>Age Group</td><td colspan="3">Second Year (18-20 years)</td></tr>
<tr><td>Teaching aids</td><td>Materials & Tools</td><td>Basic concepts</td><td>Goals</td></tr>
<tr><td>Photographs of works by artists who gradually used their work, such as some Futurist artists such as Marasal du Champ</td><td>- Canson paper Sketch 80gm
- pencil
- Gouache color brushes
- Ruler
- Aristotle's Triangle</td><td>- Rhythm
- Color</td><td>- To be aware of the relationships between the primary, secondary and secondary color
- Be able to analyze colors.
- To mix colors correctly
- Maintain color texture</td></tr>
<tr><td colspan="2">Strategy used</td><td colspan="2">Lesson Progress</td></tr>
<tr><td colspan="2">Innovative thinking</td><td colspan="2">- At the beginning of the lecture, the researcher asks some questions about the topic of the previous lesson.
- The meaning of color gradient and its relationship to color compatibility is explained
- How the staging process is explained in proportional stages
- Staging is explained by mixing a primary color with primary/primary with sub/sub with sub/sub with secondary / secondary with secondary
- A color gradient is made on the first page through four rectangles from white to primary color and the fourth rectangle is from a secondary color to white primary colors
- Each student is asked on the second page to make four rectangles so that the first three rectangles is a primary color gradient with another primary, while the fourth is a secondary color (or a color preferred by the student) with a neutral color for the triple color circle, through the gouache color material</td></tr>
<tr><td colspan="3">It occurs whenever the student issues a desired behavior and the reinforcement will be material and moral</td><td>Strengthening</td></tr>
<tr><td colspan="3">What difficulties did the student face while doing the lesson and how to overcome them</td><td>correction</td></tr>
</table>

The following are examples of the results of the second lesson:

Subject	Introducing the Medgorny program and starting the implementation of the design and coloring it on the design board
Domain	design
Time	Lecture (3 hours), lecture (3 hours) in the ninth and tenth weeks
Age Group	Second Year (18-20 years)

Teaching aids	Materials & Tools	Basic concepts	Goals
- Images of works by artists who used the secondary and sub-color to implement their circle - Mansel model of color - Identify some terms in Arabic and foreign color	- Canson paper Sketch 80gm - Gouache pencil - Gouache colors - Ruler - Aristotle's Triangle	- Color Proportion and proportionality - Color Rhythm	- Recreates shapes in an innovative way. - Recreates direct colors. - Be able to analyze color - Be able to Maintain color texture

Strategy used	Lesson Progress
Brainstorming	- At the beginning of the lecture, the researcher throws some interesting questions in order to motivate students to the topic of the current lesson through brainstorming. - Follow-up explanation of what design is and what are the basic concepts and elements of design. - What are secondary colors and how to get those colors are presented and explained, by displaying the works of some artists - What are the sub-colors and how to get them? - Some color-specific terms are explained. - Each student is required to apply the color circle in the sketch of the design material by implementing it in gouache colors.

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

The following are examples of the results of the second lesson:

artworks, through the Internet	colors		analyze areas
Strategy used		Lesson Progress	
Innovative thinking		- At the beginning of the lecture, the researcher asks some questions about the topic of the previous lesson. And see what the students have accomplished from the previous lecture until the current lecture. - Some questions are thrown as a method of brainstorming on what artificial intelligence is, what are its advantages, what are its disadvantages, and what are its most famous programs from the point of view of the research sample members. - It is explained what the Midjourney program is and how to deal with it. - Each student determines what types of figures they prefer. - The student enters the keywords in the program to search for an image, and those words describe the state and type of art and anything special that the student likes to be present in this image, such as a specific type of clothing or a specific background type, a type of color treatment, a type of skin color, a type of ornaments, a type of materials that treat shapes, and so on, then the student calls the largest amount of treatments from the program to be displayed and choose the closest image to the subject of the teaching unit. The student then begins to analyze the work on transparencies, re-analyze the color spaces, and reprocess the lines and morphological areas of the shapes to give a unified spirit to the design palette. - In the following week, the student transfers the design from the transparent paper through which the original image was processed, on the design panel, chooses the treatment and gradation of colors, and chooses compatible colors according to the rules of compatible colors and color theory, and the coloring of the design panel begins.	
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

The following are examples of the results of the third lesson:

Fourth lesson results

Item	N	Item	N

	2		1
	4		3

Continued - Fourth Lesson Results

Item	N	Item	N
	6		5

	8		7

Proportion and proportionality	The students used to consider the proportions of the areas within the color circle for the consistency of the shape of the color circle
Color	Students used primary colors in the color circle
(Numbers 1-12 symbolize 12 members of the 20-research sample)	

Continued - Fourth Lesson Results

Item	N	Item	N
	10		9
	12		11

comment	
The students used rhythm by taking into account the repetition of color in the spaces indirectly while combining it with another color or with a neutral color, and also resulted through the repetitions of the method of analyzing the areas consistent with the context of the composition of each painting for students separately	Rhythm
Students used color compatibility within the staging spaces by merging a primary color with primary or secondary color with primary or one of them with neutral	Color
(Numbers 1-12 symbolize 12 members of the 20-research sample)	

Eleventh: Artwork information

N	Student Name	Design printing tools	Brush size	Colors type	Paper Material	Size	Topic

1	Manal Mohsen Abd El , Fattah	Transparency paper and carbon paper	4 and 6	Gouache colors	Canson paper 300g	25x35cm	Mixing two civilizations
2	Mariam Mohammed Abdulrahman	Transparency paper and carbon paper	4 and 6	Gouache colors	Canson paper 300g	25x35cm	Mixing two civilizations
3	Manar Salah Mohammed	Transparency paper and carbon paper	4 and 6	Gouache colors	Canson paper 300g	25x35cm	Mixing two civilizations
4	Hoda Saeed Abdul razek	Transparency paper and carbon paper	4 and 6	Gouache colors	Canson paper 300g	25x35cm	Mixing two civilizations
5	King Tamer Fawzi	Transparency paper and carbon paper	4 and 6	Gouache colors	Canson paper 300g	25x35cm	Mixing two civilizations
6	Ayatollah Ahmed Sadat	Transparency paper and carbon paper	4 and 6	Gouache colors	Canson paper 300g	25x35cm	Mixing two civilizations
7	Habiba Nabil Fathi	Transparency paper and carbon paper	4 and 6	Gouache colors	Canson paper 300g	25x35cm	Mixing two civilizations
8	Aya Faris Al , Sayed	Transparency paper and carbon paper	4 and 6	Gouache colors	Canson paper 300g	25x35cm	Mixing two civilizations
9	Balqees Mahmoud Muhammad	Transparency paper and carbon paper	4 and 6	Gouache colors	Canson paper 300g	25x35cm	Mixing two civilizations
10	Rahma Zakaria Ismail	Transparency paper and carbon paper	4 and 6	Gouache colors	Canson paper 300g	25x35cm	Mixing two civilizations
11	Rawan Sayed Ammar	Transparency paper and carbon paper	4 and 6	Gouache colors	Canson paper 300g	25x35cm	Mixing two civilizations
12	Yona Morcos Fares	Transparency paper and carbon paper	4 and 6	Gouache colors	Canson paper 300g	25x35cm	Mixing two civilizations

Twelfth: Conclusions 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

* See research appendices.

** See research appendices.

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.

Thirteenth: Quantitative results

1- The arbitrators 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 color spaces included in the design panels."

2- The judges agreed 82% on the availability of the property "that the subjects were able to formulate the shapes in an innovative way."

3- The judges agreed 92% on the availability of the property "that the sample members are able to form compatible color combinations".

4- The judges agreed 90% on the availability of the property "that the subjects are able to achieve superposition through color".

5- The judges agreed 91% on the availability of the property "that the subjects are able to achieve the analysis of color areas".

Results How to:

1. The results of the students' work in the design subject were based on the formal analysis of the spaces with the use of vertical, horizontal and inclined axes to build the design panel.

2. The colors of the spaces for each element were also chosen through the characteristics of color compatibility, after the students made these analyzes through the models they obtained using artificial intelligence programs (Midgorney) after many attempts to experiment with the program to obtain the closest results that can be implemented.

3. The numbers from 1 to 12 symbolize the number of 12 members of the research sample (the 20 individuals).

Fifteenth: 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.
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..

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