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The Effectiveness of a Teaching Unit Analysis of the Color Grad Generated by the Midjourney AI Program for the Combining Civilizations Topic to Create Designs. Among a Sample of Art Education Students at the Faculty of Specific Education, Ain Shams University

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Anstract

Art education seeks to develop the student and his sophistication in terms of cognitive, mental, artistic and physical aspects to reach 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 its composition depends on the elements of formation such as line, color and shape and does not stand on aesthetic relations only, but rather employs these elements to achieve goals that keep pace with human needs in terms of function and life. (Fath al-Bab Abd al-Halim, Ahmed Rashdan, 1985)

Keywords – sophistication, cognitive, effective , employs, human

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1. Introduction:

Art education seeks to develop the student and his sophistication in terms of cognitive, mental, artistic and physical aspects to reach 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 its composition depends on the elements of formation such as line, color and shape and does not stand on aesthetic relations only, but rather employs these elements to achieve goals that keep pace with human needs in terms of function and life. (Fath al-Bab Abd al-Halim, Ahmed Rashdan, 1985)

Mahmoud Al-Bassiouni mentions that the role of art education is considered as an educational technology to perform artistic experimentation, and the teacher is the engine for transferring his expertise and

experiences to students and art connoisseurs with the aim of enriching the field of art education with educational programs for different artistic values in college formations. (Mahmoud Al-Bassiouni, 1965)

Design as a plastic art is an organized effort for a sequential and purposeful plan in which the elements that serve the final goal of the design are assembled into an integrated unit, and reveal the sequence and sequence of intellectual and planning processes of 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. (Mohamed Hafez El-Khouly, Mohamed Ahmed Salama, 2007)

this is what the researcher followed with the students of the second year in designing the decorative painting through the effectiveness of an existing teaching unit Analysis of the color grad generated by the Midjourney AI program for the combining civilizations topic to create 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. (Robert Gillam Scott, 1990)

The foundations of the design represent the main aesthetic goal that the artist tries to achieve in a way that reflects the aesthetic purpose and also reflects the artist's subjectivity and expressive individuality.

There are many methods that the designer can follow in order to achieve these design foundations and deliver his intellectual and aesthetic message performed by the designer's artwork. (Ismail Shawky Ismail, 2002)

The researcher has used in the current research and through the teaching unit with the students of the second year the elements of design such as line, area and color in the analysis of color spaces that have been produced through the equations of the Midgorney program, so a number of these variables have been installed and the other unleashed, and the researcher believes that the field of design is 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 research problem is concentrated in the effectiveness of an existing teaching unit On The Analysis of the color grad generated by the Midjourney AI program for the combining civilizations topic to create 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: (Ali Maher Khattab, 2008)

"Pre-Experimental Designs"

It is called Campbell and Stanley (1966). Campell & Stanley with preliminary experimental designs, while it is called by Lahman and Mehrens (1979) Lehmann & MeherensIsaack 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.
The experimental approach "Preliminary Design" includes several designs, including:

The first design (followed by the researcher): the design of one group with dimensional measurement only:

This design is called by different names such as single-dose design One Shot Case Study Or the design of one group with dimensional measurement (1981), and this design can be represented as follows:

Treatment	Posttest
X	**T2**

This design may be used, for example, to study whether the new method of counseling raises the level of compatibility, or whether a new method of teaching will increase the speed of reading, or whether a new program in counseling helps to improve the self-concept of individuals, and the procedures for this design are as follows:

1. Selecting a group of individuals (study sample) in some way.
2. This group is exposed to the experimental variable (X) for a while.
3. A post-test (T2) is performed to measure performance after experimental treatment.

"

Third: Research Objective: Disclosure of the effectiveness of a teaching unit based on Analysis of the color grad generated by the Midjourney AI program for the combining civilizations topic to create 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 Analysis of the color grad generated by the Midjourney AI program for the combining civilizations topic and creating designs. among 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, numbering (29) 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 (16) 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- Formal Analysis:

The procedural definition followed by the researcher is the analysis of the form through the elements of the design in the light of the foundations of the design.

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)

MidJourney 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. The created illustrations form a visually appeal ing conglomerate of visual data searched after entered key words (Fig. 1). The MidJourney tool was selected for the study due to the degree of involvement of the creator – the physical user – estimated to be the highest among the other tools available. The creation process is performed as follows: after entering the /imagine command and key

words – the socalled prompts – the user receives four draft results of an image generated based on those data. A deci sion can be made to develop them or create further vari ants based on them, if judged attractive in the first stage (low resolution and low quality). If none of the proposals meet with the expectations, it is possible to repeat the creation task based on the same key words and obtain differ ent results; it is thus worth emphasising that reentering the exact same key words will never produce the same results, because the programme selects matching images and graphics available on the Internet at random in each case, additionally giving them a variable proportion in the created image. Furthermore, the continuous analysis of user choices allows the script to evolve as it learns to gen erate better and better visualisations – therefore, the image produced by the script is unique and, in a sense, attributed to the moment in which it was generated. (Kuhlman D, 2009).

3- The Design:

The design, 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. (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 innovative activity to reach multiple results from one variable using design elements. (Mustafa Farid Al-Razzaz, 1984)

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 imaginary teaching strategy, and the research sample consisted of (87) students, an experimental group of (93) students from the first preparatory grade at Dar Hira School in Manfalut (June 30 School Complex), a control group of (93) students from the first preparatory grade at Al-Orouba Benza Qarer Preparatory Mixed School, Assiut Governorate, for the academic year 2022-2023 for the second semester.

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

2- Study of 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.
To achieve this goal, the experimental approach with a semi-experimental design was used for equal groups, and the study sample consisted of (100) students distributed into two groups: an experimental group consisting of (50) students from Dar Hira Preparatory School in Assiut Educational Administration, and a control group of (50) students from the same school in Assiut Governorate, and research materials and tools were prepared represented in: a teacher's guide for the engineering and measurement unit, an activity booklet, a test for visual thinking skills, and the research reached the following results: The existence of a statistically significant difference at the level of (0.01) between the average scores of the two groups (experimental and control) in the dimensional application of the visual thinking skills test in favor of the experimental group, and in light of this the research recommends the need for mathematics teachers to use modern strategies in teaching mathematics, especially the strategy of the circular house shape.

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. (Yara Sayed Ibrahim Morsi, Hamdi Mohamed Morsi, Zakaria Jaber Hinnawi, 2023)

3- Study of 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 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. (Ahmed Mustafa Abdel Aziz, 2021)

Second: 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.

The previous study can be used in how to teach and explain the program to students, and to know what problems students faced during the program practice to avoid them during the current study. (Hutson J, Lang M, 2023)

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. (Ahmad Faisal Choiril Anam Fathoni, 2023)

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

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 ownership of 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 in order not to fall under such things. (Harry Jiang, Lauren Brown, Jessica Cheng and other 2023)

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 Analysis of the color grad generated by the Midjourney AI program for the combining civilizations topic to create designs, and the researcher followed the following steps:

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

2- Training is carried out on the color gradient and how to control the levels of color transfer and that there are colors that need sensitivity in dealing in the staging, while retaining the appropriate color texture in the training application. This is done by grading 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 reach the sub-colors during the grading process. Where the student said to make 8 columns, the area of one column is 2 cm x 20 cm, divided into 10 squares Within that total space, where the training was

where the first page of the training is to scale a basic color with another basic and then the fourth rectangle to scale a color of its choice with a neutral color. 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 MedJournal 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 Medgourny program. This will also qualify him later to perceive consistent colors (as an initial step for the student).

5- Building the axes of the design painting to start drawing the resulting painting from the Midjourney program, but with the reprocessing of spaces in the case of modifications in order to put an entity for the student's fingerprint inside his painting, and to develop a line type and spaces in line with the different civilizations that the student used, while highlighting the analysis of color spaces in a way that is in line with the subject of the painting

6- The student transfers the axes and formal analyzes that he designed on transparent paper on the Canson material in 1/8 sheet, and an interior of 30×40 cm. It isolates the margin around the design to preserve it, and the colors were chosen for the elements and areas analyzed through the color gradient of one color and also according to the consistent color rules in the whole painting. For example, the implementation of human skin by treating it gradually color treatments skin color according to its type and is placed Colors within the spaces analyzed in the previous stage, and also taking into account the highlighting of shades, light and dark,

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 the application of the color grading process to configurations 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.

The philosophy of the teaching unit includes relying on the design course for the second year of art education (Faculty of Specific Education - Ain Shams University), and the use of structural axes, and the philosophy of the teaching unit depends on the ability to form ideas, the ability to adapt and crystallize these 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 analyze areas, reformulate shapes innovatively, the ability to form a setof compatible color gradients, and the ability to achieve superposition through color, taking into account the foundations of design.

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

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

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

Lesson Two

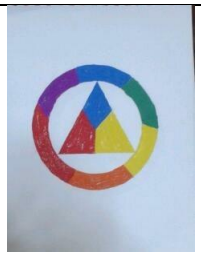
Subject	Continue explaining what color is and training on drawing a secondary color circle (Training 2)		
Domain	design		
Time	Lecture (3 hours) in the second week		
Age Group	Second Year (18-20 years)		
Teaching aids	Materials & Tools	Basic concepts	Goals
- Images of the secondary and sub-color circle	- Sketch	- Proportion and proportionality	- Recreates direct colors

- Mansel model of color - Identify some terms in Arabic and foreign color	- pencil - Gouache colors - Ruler - Aristotle's Triangle	- Color	- 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 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:

Samples of the results of the first lesson

Student Result	N	Student Result	N	Student Result	N	Student Result	N
	4		3		2		1
	8		7		6		5
	12		11		10		9
	16		15		14		13

comment	
Proportion and proportionality	The students used to take into account 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 1-16 symbolize 16 members of the 29 research sample)	

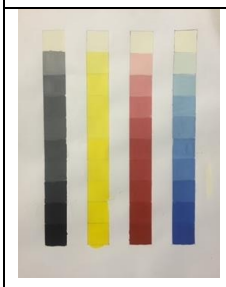
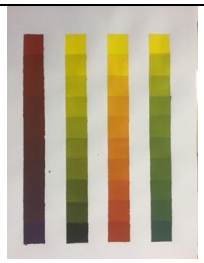
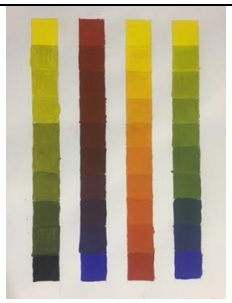
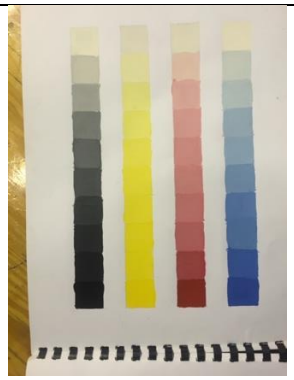
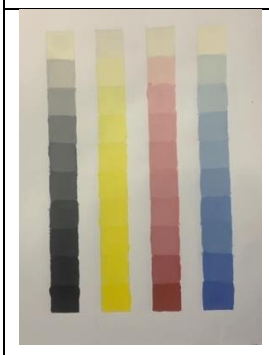
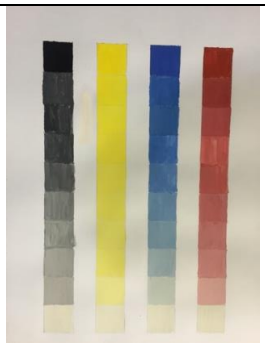
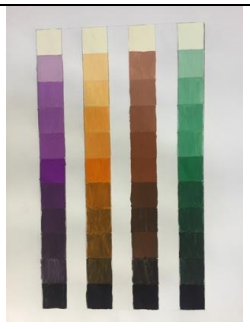
Samples of the results of the second lesson

N	Student Result	N	Student Result	N	Student Result	N	Student Result
1		2		3		4	
5		6		7		8	
9		10		11		12	
13 comment Proportion and proportionality: The students used to take into account the proportions of the areas within the color circle for the consistency of the shape of the color circle Color: Students used secondary colors in the color circle **(Numbers 1-16 symbolize 16 members of the 29 research sample)**		14		15		16	

<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>- Sketch
- 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 third lesson:

Results of the third lesson

Student Result	N	Student Result	N	Student Result	N	Student Result	N
	4		3		2		1
	8		7		6		5
	12		11		10		9
	16		15		14		13

comment	
Students used rhythm by taking into account the repetition of color in spaces in a direct way while combining it with another color or with a neutral color	Rhythm
Students used color gradation within the staging spaces by merging a primary color with primary or secondary color with primary or one of them with neutral	Color
(Numbers 1-16 symbolize 16 members of the 29 research sample)	

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

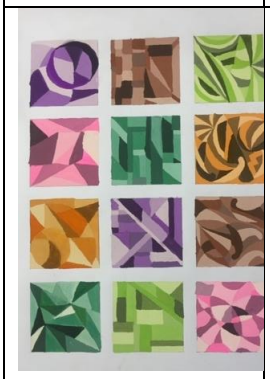
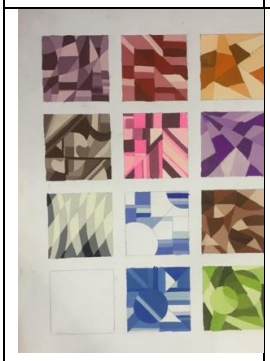
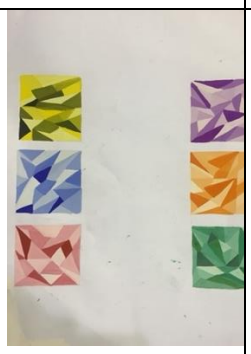
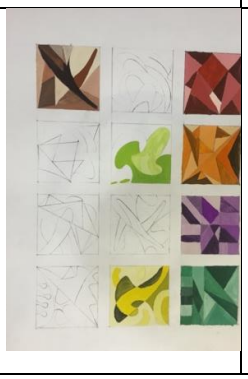
Lesson Four

Subject	Square Analysis and Treatment of Resulting Areas by Color Gradient (Training 4)		
Domain	design		
Time	Lecture (3 hours), lecture (3 hours) in the fifth and sixth weeks		
Age Group	Second Year (18-20 years)		
Teaching aids	Materials & Tools	Basic concepts	Goals
Photographs of works by artists who used summarization and analysis in their works, such as Picasso and Paul Klee	- Sketch - pencil - Aristotle's Triangle - Gouache colors - Gouache color brushes	- Rhythm - Color - Area	- Recreates shapes in an innovative way - Be able to analyze areas - The student should devise design solutions to solve the color spaces resulting from the analysis process
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 - A number of 12 squares are implemented within the canson sketch page (price space) so that the student makes an analysis of the square area by solving the internal area of the square with axes, either horizontal, vertical or inclined at an angle of 45 degrees, using his engineering tools such as Aristotle's triangle and also on the next page he solves the area of the square by organic lines, so that the resulting areas will be solved by color gradation of one color through what was produced from one of the rectangles of the previous exercise, where it will represent Each of the squares analyzed rectangle outlet from the color scale from the previous lesson.

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 fourth lesson

Student Result	**n**	Student Result	**n**	Student Result	**n**	Student Result	n
	**4**		**3**		**2**		1
	**8**		**7**		**6**		5
	**12**		**11**		**10**		9
	**16**		**15**		**14**		13

comment	
Students used rhythm by taking into account the repetition of color in spaces in a direct way while combining it with another color or with a neutral color	Rhythm
The area of the square was analyzed through the horizontal, vertical and oblique axes of the square and their equivalents within the square area	Area
Students used color gradation within the staging spaces by merging a primary color with primary or secondary color with primary or one of them with neutral	Color
(The numbers from 1-16 symbolize the number of 15 members of the 29 research sample)	

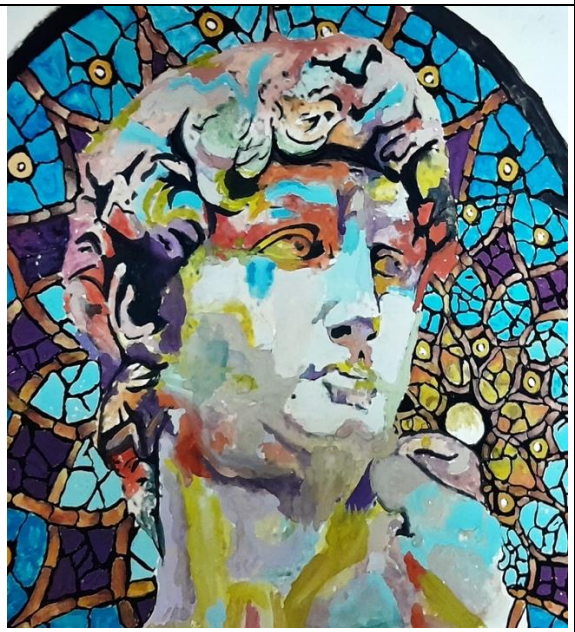
Lesson Five and Six

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 artificial intelligence to implement their artworks, through the Internet	- Sketch - Canson Paper 300g - Gouache colors	- Rhythm - Color	- Recreates shapes in an innovative way - Be able to 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.		

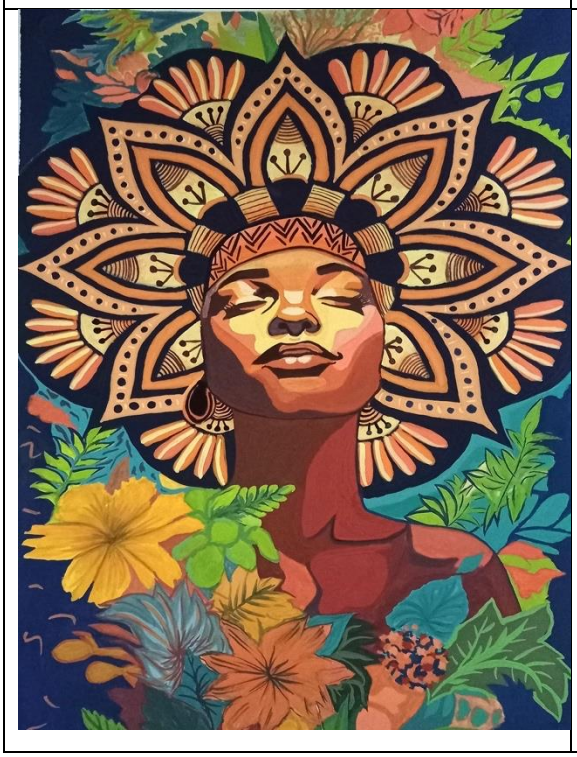
	- It is explained what the Midjourney program is and how to deal with it. - Each student determines what types of art they want to mix. - The student enters the keywords in the program to search for an image, and those words describe the state and type of art and anything special that the student likes 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 sixth lesson:

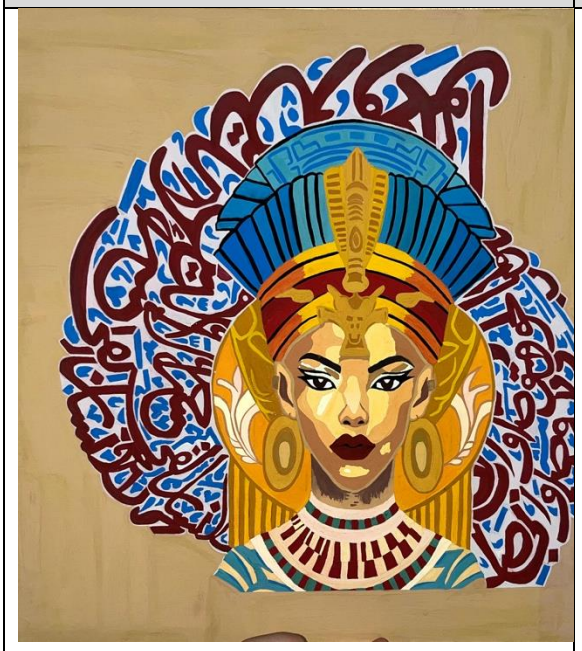
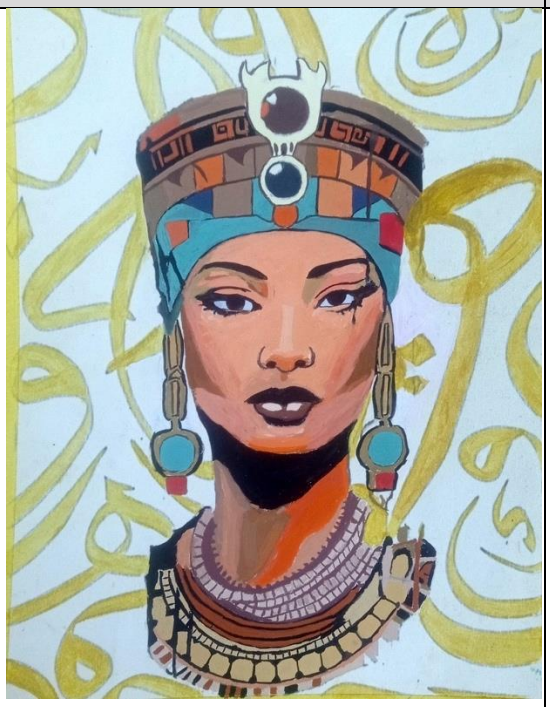
Results of the sixth lesson

Student Result	N	Student Result	N
	2		1
	4		3

Continued - Results of the sixth lesson

Student Result	N	Student Result	N
	6		5
	8		7

Continued - Results of the sixth lesson

Student Result	N	Student Result	N
	10		9
	12		11

Continued - Results of the sixth lesson

Item Analysis	M	Item Analysis	M
	14		13
	16		15

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 gradation within the staging spaces by merging a primary color with primary or secondary color with primary or one of them with neutral	Color

(Numbers 1-16 symbolize 16 members of the 29 research sample)

Eleventh: Artwork information

N	Student Name	Design printing tools	Brush size	Colors type	Paper Material	Size	Topic
1	Mariam Khaled Mohamed	Transparency paper and carbon paper	4 and 6	Gouache colors	Canson paper 300g	40x30cm	Mixing two civilizations
2	Manar Salah Mohamed	Transparency paper and carbon paper	4 and 6	Gouache colors	Canson paper 300g	40x30cm	Mixing two civilizations
3	Manal Mohsen Abdulfattah	Transparency paper and carbon paper	4 and 6	Gouache colors	Canson paper 300g	40x30cm	Mixing two civilizations
4	Hoda Saeed Abdul razek	Transparency paper and carbon paper	4 and 6	Gouache colors	Canson paper 300g	40x30cm	Mixing two civilizations
5	Balqees Mahmoud Mohamed	Transparency paper and carbon paper	4 and 6	Gouache colors	Canson paper 300g	40x30cm	Mixing two civilizations
6	Alaa Mohamed Tawfiq	Transparency paper and carbon paper	4 and 6	Gouache colors	Canson paper 300g	40x30cm	Mixing two civilizations
7	Rawan Mohamed Saher	Transparency paper and carbon paper	4 and 6	Gouache colors	Canson paper 300g	40x30cm	Mixing two civilizations
8	Rana Saeed Ibrahim	Transparency paper and carbon paper	4 and 6	Gouache colors	Canson paper 300g	40x30cm	Mixing two civilizations
9	Mustafa Alsayed Mahdi	Transparency paper and carbon paper	4 and 6	Gouache colors	Canson paper 300g	40x30cm	Mixing two civilizations
10	Zainab Hussein Mustafa	Transparency paper and carbon paper	4 and 6	Gouache colors	Canson paper 300g	40x30cm	Mixing two civilizations
11	Shahed Ahmed Ramadan	Transparency paper and carbon paper	4 and 6	Gouache colors	Canson paper 300g	40x30cm	Mixing two civilizations
12	Mohamed Alsayed Mahdi	Transparency paper and carbon paper	4 and 6	Gouache colors	Canson paper 300g	40x30cm	Mixing two civilizations
13	Gannatullah Medhat Ragheb	Transparency paper and carbon paper	4 and 6	Gouache colors	Canson paper 300g	40x30cm	Mixing two civilizations
14	Habiba Nabil Fathi Mahmoud	Transparency paper and carbon paper	4 and 6	Gouache colors	Canson paper 300g	40x30cm	Mixing two civilizations

15	Mennatullh AMR Ramadan	Transparency paper and carbon paper	4 and 6	Gouache colors	Canson paper 300g	40x30cm	Mixing two civilizations
16	Maha Mohamed Samer	Transparency paper and carbon paper	4 and 6	Gouache colors	Canson paper 300g	40x30cm	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 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 analyze the spaces included in the design panels."

2- The judges agreed 79% 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 subjects are able to form compatible color combinations".

4- The judges agreed 91% on the availability of the property "that the subjects are able to achieve superposition through color."

5- The judges agreed by 90% on the availability of the property "that the sample members are able to achieve the formal analysis of the color areas."

6- The judges agreed 90% on the availability of the property "that the sample members are able to build the design panel".

Research Results:

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. Colors were also selected for the analyzed areas of each element through the color gradient of one color. And also through the use of methods of choosing compatible colors and how to rely on them in deducing color gradations to embody color areas and also to show light and dark, after the students made these analyzes through the models they obtained using artificial intelligence programs (Midjourney) after many attempts to experiment with the program to obtain the closest results related to the subject of the teaching unit

3. The numbers from 1 to 16 symbolize the number of 16 members of the research sample (the 29 individuals).

* See research appendices.

** See research appendices.

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 delving into natural visions closely because of their visual inventory that benefits students and they are inspired by 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 other three- and two-dimensional forms.

6. Employing the innovative capabilities and solutions resulting from the analysis of the square and its cubic form in designs that develop divergent thinking.

7. 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.

Acknowledgement:

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Research Appendices

Appendix (1) The final image of the questionnaire and the scale of judging the availability of some characteristics in the design panels.

Appendix (2) Stages of calculating the percentage of the arbitrators' agreement on each of the characteristics included in the scale.

Appendix (1)

The final image of the questionnaire and the measure of judging the availability of some characteristics in the design panels.

Prof. .....

Greetings.

Prof. Ahmed Mustafa Mohamed Abdel Aziz, Professor of Design, Department of Art Education, Faculty of Specific Education – Ain Shams University with research entitled: **The effectiveness of a teaching unit Analysis of the color grad generated by the MidjourneyAI program for the combining civilizations topic to create designs. among a sample of art education students at the Faculty of Specific Education, Ain Shams University.**

The research requires the establishment of a measure to judge the availability of six main characteristics that achieve the objectives of the research, and the role of the arbitrator is to answer b (√) if the property is available, and the answer is (×) if the property is not available, and the following is the form of the scale (the final form after modification).

Student Number	**characteristics Name**	**Availability**	
		√	×
1	Ability to analyze the areas included in the design panel		
2	Crafting shapes in an innovative way		
3	Configure compatible color combinations		
4	Achieve overlay through color		

5	Achieve morphological analysis of color spaces		
6	Achieving the foundations of building the design panel		

- Please review the items of the scale and express an opinion on their appropriateness in light of the objectives of the current research.

Thank you Researcher

Appendix (2)

Stages of calculating the percentage of arbitrators' agreement on each

One of the properties contained in the scale

The first stage: Each arbitrator shall judge the availability or non-availability of the five characteristics in (16) design panels representing the results of the current research through the following form:

Student Number	**(Numbers) Plates and their judging (availability of characteristics)**								**Total feature availability in the 16 panels**
	1		**2**		**3**		**4**		
	Yes	**No**	**Yes**	**No**	**Yes**	**No**	**Yes**	**No**	
1									
2									
3									
4									
5									
6									

To the end of the 16 Design

The second stage: reaching the percentages of the arbitrators' agreement on the availability of each of the five characteristics through the following model, which aims to reach the percentage of arbitrators' agreement for one property only and repeats the use of this model to reach the percentages for each of the five characteristics on the scale.

Arbitrators*	**Availability or unavailability of the feature**						**% Arbitrators Agreement**	**Average Arbitrators Agreement**	**Total number () √per arbitrator**
	Design (1)		**Design (2)**		**To the end of the 16 design**				
	√	×	√	×					
First Arbitrator									
Second Arbitrator									
Third Arbitrator									

From the previous model can get:

1- The total number (√) of each arbitrator on each property.

2- Finding the average agreement of the arbitrators on the availability of the property by dividing the average agreement of the arbitrators by the number of arbitrators (3 arbitrators).

3- Finding the percentage of arbitrators' agreement on the availability of a property by dividing the average agreement of the arbitrators by the number of plates, which is 16 panels, and then multiplying the quotient × 100 to avoid fractions.

The result (percentages) were then rounded to avoid fractions as well.

Prof. Al-Husseini Ali Mohamed, Professor of Decorative Design and former Head of the Department of Decorative Design, Faculty of Art Education, Helwan University

1. Prof. Emad Farouk Ragheb, Professor of Decorative Design and former Head of the Department of Decorative Design, Faculty of Art Education, Helwan University
2. Prof. Omnia Rashad, Professor of Decorative Designs, Faculty of Art Education, Helwan University

Research Summary

The effectiveness of a teaching unit Analysis of the color grad generated by the MidjourneyAI program for the combining civilizations topic to create 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 the analysis of color spaces resulting from the artificial intelligence program (Midjourney) to create 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 the analysis of color spaces resulting from the artificial intelligence program (Midjourney) to create 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 formal analysis of color spaces resulting from the artificial intelligence program (Midjourney) and creating 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: 16 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 students' work in the design subject were based on the analysis of color spaces resulting from the artificial intelligence program (Midjourney).

(B) The colors for the element and the analyzed areas for each surface were selected through the color grading of the single color.

• Ahmed Mustafa Mohamed Abdel Aziz Hassan, Professor of Design, Department of Art Education, Faculty of Specific Education, Ain Shams University.