

العلاقات اللونية وأثرها في تحقيق البعد الجمالي في تصميمات أقمشة ملابس السيدات

Color relations and their impact on achieving the aesthetic dimension in the designs of women's clothing fabrics

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Introduction:

Color is one of the most exciting elements surrounding us. It is an artistic element that has a direct impact on our feelings. It is a universal language in terms of perception, and it has the ability to arouse the greatest sensory and emotional response.

Color is considered one of the most important elements of design, as it is part of the design space, and it emphasizes the design idea and gives rise to the aesthetics of its elements. A successful design must include colors that create strong, desirable impressions. The good selection and combination of colors brings us to a high degree of beauty, and harmony in life.

In the field of designing fabrics for women's clothing, color is one of the powerful elements influencing the design of fabrics. The world of fashion cannot be imagined without colors, and they are being translated in the field of fashion through materials, textile compositions, dyes, printing and treatments. Colors play a formative role through their areas and distribution within the design space. In color relationships, they achieve aesthetic values represented in harmony, cohesion, and harmony, and help the designer communicate his/her ideas.

Colors are often suggested and implemented on the surfaces of fabrics without sufficient scientific experience and knowledge of the principles and scientific foundations for choosing colors in terms of the aesthetic effects that those colors impart to these fabrics. Thus, it was necessary to study the concept of color, explain the theories of color harmony and contrast, and study its philosophy through color relationships.

The research concluded by defining a set of color relationships through the use of color groups associated with the color circle. Substitution and change were also made in those groups through addition and reduction of colors (such as adding black or white to color groups), and the degree of their brightness in terms of illumination and saturation, to achieve another dimension in aestheticism in women's clothing fabrics.

Research problem:

The research problem is represented in the following question:

- Is it possible, through the objective study of color and its characteristics, and color groups on the color circle, to employ color relationships in the field of designing fabrics for women's clothing, in a way that enriches the design and achieves aesthetic values?

Research aims:

The research aims to:

- Study of color and its characteristics, and scientific confirmation of the origins of the use of color through mutual color relationships between colors with various design elements to arrive

at designs for women's clothing fabrics with successful color relationships, thus achieving an aesthetic dimension to the designs.

- Employing the technical capabilities of computer programs to obtain innovative design solutions for women's clothing fabric designs, achieving an aesthetic dimension.

Research importance:

The importance of the research is summarized in:

- Highlighting the importance of color as an element of design, and identifying color relationships and their role in achieving the aesthetic dimension in women's clothing fabric designs.

- Limiting the color relationships between colors on and outside the color circle, in order to achieve aesthetic and artistic values in the designs of women's clothing fabrics.

Research hypotheses:

The research assumes that:

Different color relationships can be identified that contribute to enriching the designs of women's clothing fabrics, and help highlight the aesthetic values of the color element.

- It is possible to determine the aesthetic values of the color element, and the role of color relationships in achieving aesthetic foundations.

Research Methodology:

Follow the search:

- The descriptive and analytical approach: through studying color, its characteristics, and color relationships, and creating designs for women's clothing fabrics, in which artistic and aesthetic values are achieved through color relationships.

- The experimental approach: It appears through design experiments for harmonious color relationships suitable for women's clothing fabrics, and proposals for employing those fabrics in the field of women's clothing.

Key words:

Color relationships - aesthetic dimension - clothing fabrics.

1- The theoretical framework of the research:

1-1 Color:

It is that physiological effect - related to the functions of the body's organs, resulting from the retina, whether it is caused by colored pigment, or from colored light. Color is a sensation and has no existence outside the nervous system of living organisms.

By examining the color of something with an analytical and in-depth look, we find that this color is determined by three properties or characteristics, which are:

1-2 Color properties:

1 - The color is Hue

2 - Color value

3 - Color saturation (chroma).

1-2-1 Color code: Hue

It means the origin of the color, which is the characteristic that distinguishes one color from another, and refers to the name of the color, and we can change the essence of the color (the

origin of the color) by mixing it with another color. For example, when mixing red with yellow, it produces the color orange, and this is called a change in the essence of the color. Color (6: p. 99).

This property results from the difference in the lengths of light waves. Color is determined based on the wavelength, where red has the longest wavelength, followed in order by orange, then yellow, then green, then blue, then violet.

A change in wavelength does not mean a change in the essence of the color only. This change in type means, first of all, a change in the effectiveness of its effect on visual perception. Colors with a large wavelength, such as red, are perceived at a closer distance than their actual distance from the viewer, so red is seen more prominently from its place. While the green color is seen almost where it is, and the blue color is seen a little further away from its actual place, and this optical phenomenon is known as "color advance and delay." The increase in the wavelength of the color also leads to colors with a long wavelength appearing larger than their actual area, red and blue, for example. If they are placed in two equal areas, the area of red is perceived to be larger than the area of blue. Scientists attribute this phenomenon to the difference in the refractive index of the color spectrum when it passes through the lens of the eye. Red is refracted as it deviates from its path to a greater degree than blue, so it falls on a larger area in the retina and is perceived larger. (2: pp. 143, 144).

1-2-2 Color Value

Value refers to the lightness or darkness of a color, which we also call the difference in luminosity or brilliance.

Value is a word that essentially means the amounts of light energy reflected by different materials. Each material has its own reflection coefficient, which can be measured, which is what we call value.

In the field of using colors, we obtain different luminous values by mixing different proportions of white and black. White is the highest luminous value, while black comes at the end of the gradation as the lowest luminous value.

The value of color is an important factor in influencing the degree of clarity of shapes. It also changes our visual sense of the nature of the material's texture and the extent of its polish and affects our perception of its hardness, and it is an important factor in the psychological and emotional impact on the viewer (2: pp. 145, 146).

1-2-3 Chroma "Saturation"

It is the property or characteristic that indicates the purity of a color or its degree of saturation. The saturation of a color is related to its purity, that is, the amount of mixing with neutral colors (white - shades of gray - black).

Lack of color saturation:

There are three types of color deficiency, each of which has its own expression:

- Decreased saturation due to the original color being mixed with an amount of white. In this case, it is said that the color has been lightened and become (light, dull, or pale) (Figure 1).

Explains the lack of saturation when color is mixed with white (21)

- Lack of saturation due to the original color being mixed with an amount of black. In this case, it is said that the original color has been shaded or become (darker) (Figure 2).

Explains the lack of saturation when color is mixed with black (21)

- Lack of saturation due to the original color being mixed with an amount of gray, and here it is said that the color has been neutralized or modified (Figure 3) (7: p. 185).

Explains the lack of saturation when color is mixed with gray (21)

1-3 Color coordination systems and measurements:

Many scientists, philosophers, and artists have researched color as a phenomenon, and the first successful practical attempt was made by Isaac Newton, when he analyzed white light into its primary components (the seven colors of the spectrum), and described them in the form of a circle.

1-3-1 Color wheel:

The color wheel is an effective method that helps in the process of color harmony and consistency. It is the basis for creating color systems, and is the reference for creating harmony in the color pattern, through which the designer can choose his colors accurately. It was first designed in 1660 by the scientist Isaac Newton, and he divided that circle into seven sections, each section representing one of the seven colors of the visible spectrum (16: pp. 154, 155) (Figure 4).

Explains Newton's color circle (19)

1-3-2 Munsell color system:

In the early twentieth century, the American portrait painter Albert Munsell, after hard work and many experiments, was able to develop a scientific theory of color, known as the Munsell system, in which he defined colors based on three color dimensions: Hue, color value, and chroma saturation.

The theory has determined the way to deal with and understand color by explaining three concepts related to the formation of color, which are the origin of color, its relationship to both the degree of lightness of the color (its value), and the degree of color saturation, or its mixing with the neutral colors white, black, and grey, where the value determines the strength or weakness of the color (12: p. 116).

This relationship is represented according to colorful graphical charts that facilitate understanding of this theory. This chart is presented in different ways, and the most commonly used method consists of three independent dimensions, which can be represented cylindrically by an irregular three-dimensional color solid, which is a vertical axis (column), divided into ten parts. It begins with complete black, with a value of 0, passing through gray, and ending with white, with a value of 10.