Research on the Application of Color Language in Computer Graphic Design

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Abstract. If form is the description of things figuratively, then color is undoubtedly another language of expression, which is expressed with form but not limited by it. Once this feeling is reflected, it will recombine with you in your space, and the view is nearly the same, but the perception is not. And the combination of color and graphic design is to make our understanding of color more profound. Based on this, this paper will analyze the application of color language in computer graphic design.  

Keywords: Color Language, Graphic Design, Computer Technology  

1. Introduction  

The use of color in every aspect of life, behind the color, reveals different cultures, aesthetics, state of mind, character, some people love elegance and minimalism, some people love the warmth and oil painting. The collision of colors can produce both emotions, infectious, and "crash scene", there is no right and wrong colors, only people who can and can't use them, colors are not popular and not popular, only the times, the aesthetic changes in society, aesthetic changes, also lead to changes in the favorite colors. In the visual aesthetics, color is crucial, in the film on the atmosphere of the plot of the swoon, the character's state of mind to depict the silent, can not be separated from the color. The psychological impact of color on people has been used in all aspects of life. Behind the color, there are multiple qualities such as culture, history, psychology, character and age. Therefore, for graphic designers, color is a very important design element [1].  

2. Brief description of computer graphic design and color language  

In the era of information technology, new media plays a great role in interpersonal communication, and with the improvement of life is flat, people pay more attention to the visual enjoyment. From the current environment, the most important thing in commercial development is to find a balance between design
and art. The satisfaction in the heart that people need can be found in computer graphic design, an art form that is very different from other art designs, not only has external beauty, but also has strong practicality.

In the process of computer graphic design, color language is a very important role, so it requires graphic designers to fully understand the language of color in their work, so that people can have a stronger feeling in the face of computer graphic design. In advertising, color is an important element of its visual expression, and its function is to convey a certain message to consumers. The color used in the design has symbolic meaning for the goods, and the use of a unique color language can give different meanings to the goods. Thus guiding consumers and making it easier for them to identify the goods and create a sense of closeness. Stories that will be remembered often carry strong emotions and can influence people's ability to act. So emotion-based advertising can be very effective, but to be truly effective, advertising needs more than just a good story (ad content) [2].

Of course, in graphic design, the first thing to consider in any work is its visual viewability. The designer's foremost task is to maximize the interpretation of graphics, color, light and other modeling languages, and color is often given a specific connotative meaning in a particular context, which may influence or even determine the overall connotation and emotional expression of the entire design. Color can influence people's psychology and emotions, and people give different colors different meanings in specific contexts. For example, red represents celebration, full of power, mentioning Chinese red, there is a sense of pride, a sense of power. Yellow is very bright, is the representative color of the sun, heralding a sense of warmth, a sense of splendor, but also a sense of dignity. Green is fresh, elegant, healthy and so on. Modern graphic design is more in pursuit of emotional expression, to achieve a perfect combination of commercial and artistic graphic design, if you look at the current variety of print advertising, where the successful works, artistic are very strong, commercial and artistic to achieve a more perfect balance. Emotional expression is one of the easiest ways to use emotional factors, the main purpose of which is to weaken the commercial purpose and use emotion to make the audience receive the product or enhance brand recognition in the subconscious. Thus, the brand is humanized and helps the company to establish the image of "conscientious enterprise", which in turn triggers the desire to consume.

Nowadays, the unique communication, identification and symbolic role of color language in graphic design has been paid more and more attention by designers and enterprises, and some powerful companies and enterprises abroad have carefully chosen a certain color to represent their own image color. For computer graphic design students, mastering the correct use of color language and improving the level of graphic design ability are the main points that teachers should pay attention to.

3. Color language and the development of computer graphic design

In recent years, China's rapid development of science and technology, people can use a variety of new media to easily achieve communication, and computer graphic design has brought a lot of convenience to people's life production: not only can a comprehensive display of various properties of goods, but also can meet people's aesthetic needs. Improving the quality of computer graphic design can bring people a more comfortable spiritual enjoyment. Successful computer graphic design can help people to obtain timely information about the goods, on the basis of which to make the right choice, this feature is in line with the development of the times; but if the computer graphic design is not successful, it will
mislead people's behavior, so that people's minds into confusion, can not present information about the goods, but also cause people's disgust, and even affect the sales of goods, so that the operation of enterprises is hampered. Therefore, computer graphic design should not only fully display the various functions of the goods, but also bring people the enjoyment of beauty, in order to increase people's desire to buy.

In order to make computer graphic design fully display its own functions, color language plays an important role in which it can make full use of the main characteristics of color, in the continuous change of color hue, purity, brightness, to increase people's understanding, but also to bring people a sense of visual beauty, close the distance with consumers, while presenting the function of goods, to meet people's aesthetic needs, to stimulate consumers to buy.

First, the introduction of color language in computer graphic design has a very important role, which can be fully applied to various factors such as video, images and text, which can simultaneously show the practicality and aesthetics of the goods and deepen consumers' impressions. Second, graphic design can also continue to improve the use of color language. The use of color hue, brightness and other different factors to achieve innovation, to create a rich and diverse product appearance, can effectively attract the attention of consumers. Only by mastering the skill of correctly handling the relationship between color language and computer graphic design, and organically integrating the two, can we better display the goods and get the favor of consumers.

4. The relationship between computer graphic design and color language

In the era of rapid technological development, information is transmitted more efficiently and faster. In this situation, people's communication methods have also changed a lot. The emergence of computer graphic design has enabled people to meet certain practical requirements, not only to show the materiality of goods completely, but also to a certain extent to meet people's pursuit of spiritual aspects. Good computer graphic design can let people get more information resources, so that people make the right choice to meet people's needs for both spiritual and material aspects, on the contrary, bad design does not have such an effect, and may even cause people's aesthetic fatigue. Therefore, computer graphic design should have both practicality and aesthetics in order to play a better effect.

And color language has a vital role for a computer graphic design to have both practical and aesthetic functions, can be changed through the unique nature of color language, so that people have a specific understanding of its actual function. Graphic design can bring the role of color language to its fullest extent, talking about the effective combination of color, so that the work of graphic design has more aesthetic and practical functions [3,4].

5. The emotional characteristics of color language

Different colors express different meanings and prompt people to make associations. Analyzing the emotional characteristics of color language in computer graphic design can help people understand the unique meaning of color language and master the rules of using color language, so as to better express the theme of computer graphic design, stimulate people's emotions and influence their choices. We analyze the emotional characteristics of color language in computer graphic design.
Colors represent different meanings and make people imagine different things. The study of the emotional factors of color language in computer graphic design helps people understand the meaning in color, discover the laws of color language, and apply it to computer graphic design to make it have better performance, infect people's emotions and help people choose. The following is an analysis of the emotional characteristics of color language in computer graphic design.

**Figure 1.** Emotional characteristics of color language in computer graphic design

First, the meaning of red is enthusiasm and vigorous vitality, but foreign countries consider it a symbol of death and danger; second, orange is a representative of innocence, but sometimes it also shows presumption; third, yellow is a symbol of nobility and wisdom, but it can also indicate deception on certain occasions; fourth, green is a representative of vitality, but sometimes it also indicates inordinate; fifth, blue is a representative of broad-mindedness, but sometimes it also indicates Sixth, cyan is a symbol of wisdom and dryness, but sometimes also represents poverty; seventh, purple is a symbol of elegance and profundity, but sometimes also indicates pride. Using the above analysis of different colors representing different emotions can help people properly grasp the skills of using color language, and properly use color language in computer graphic design to better demonstrate the practicality and aesthetics of goods, bring consumers a better feeling, and help enterprises obtain considerable economic benefits [5].

6. **Tips for applying color language in computer graphic design**

6.1. Application of emotion

The correct application of color language in computer graphic design can make color indicate the correct meaning, bring consumers a comfortable feeling, convey the performance information of goods and realize the role of advertising.
First, the relationship between color and temperature. When applying color language in computer graphic design, it is necessary to ensure that the sense of temperature is in harmony with the information of the goods. For example, for advertisements about electric fans, air conditioners, refrigerators and other goods, it is necessary to take into account the sense of temperature of the products when applying color language, and the role of these goods is to bring people a cool feeling, and when choosing color language, it shall not make warm colors, but should be cool colors. Another example is the promotion of food print advertising, in general, the use of warm colors, can bring people a comfortable feeling, cause people's appetite, such as bread, pastries, etc. to red-yellow, orange and yellow. Appropriate use of color language of temperature can stimulate the emotions of consumers and cause moderate excitement, such as in order to highlight the sense of technology of electronic products can be applied to cold tones, bringing consumers a certain visual shock, resulting in the need to buy.

Second, the sense of color magnificence. Red and other bright colors can create a sense of magnificence, which is conducive to improving the grade of goods and creating a noble image of goods. Such as Chanel's print advertising, the use of high color purity of color, the use of black and white strong contrast to create a sense of magnificence, effectively enhance the grade of goods.

Third, the brightness of color. If a person sees a print ad design is brighter, he or she will feel comfortable and enjoy the spirit of the whole body, which is very easy to get the recognition of consumers. On the contrary, if the design color is darker, it will make people feel depressed, so they are not willing to approach the goods, in order to present the brightness of the goods can use cold colors, bright colors and warm colors [6].

6.2. Application of combination

Color combination is also an important expression of the application of color language, successful color combination is to bring consumers visual comfort, want to achieve this effect also need to use the composition and other elements of the cooperation. In general, the color combination mainly includes the following forms. First, the main tone and change, the color combination process should first determine the main color, to produce an overall feeling, its main role in influencing the audience's vision, and the design theme is consistent. Usually to determine the use of a large area of color, and then change the relevant hue, lightness, purity and other various factors to produce a certain change. Secondly, harmonization and contrast, color harmonization can bring consumers a harmonious feeling, such as the poster about school kite DIY theme activity, only analyzing its color application brings people a confusing feeling. After using computer graphic image processing software to correct it, it brings people a good feeling, from the application of color language, to achieve harmony and unity, highlighting the theme, strong integrity, rich visual infection, etc. It is the effect of color harmony and contrast.

7. The use of color language

7.1. Color Emotion

The core of guiding students to use color language in computer graphic design teaching is to let students understand the emotional laws of color and grasp the inner meaning of color. This conveys the message and achieves the purpose of spreading the message.
First, the temperature of color. When using color language, its sense of temperature should be consistent with the message to be conveyed. For example, when making print advertisements for electric fans, air conditioners, refrigerators and other goods, the sense of color temperature should be consistent with the functional characteristics of the goods, the most important function of these goods is cooling, so when using color language, warm colors should not be used, but cold colors. Another example is the print advertisement promoting food, which usually uses warm colors to give people a sense of warmth. Many such print advertisements such as common bread and pastries use more red and yellow, orange and so on. Of course, this temperature sensing for different goods can also make the audience a sense of excitement, such as many electronic products with cool tones to highlight the sense of technology of the goods, and then stimulate the audience's senses, so as to generate consumer desire.

Second, the color of the sense of magnificence. Red and other high-purity and bright colors, usually give a sense of magnificence, this sense of magnificence can enhance the grade of goods, establish a high-end image of goods, such as CHANEL (Chanel) print advertising, advertising the high purity of color, black and white contrast to form a sense of magnificence, so that its high-grade image is deeply rooted.

Third, the brightness of color. If a print ad is designed to be brighter, it can give people a refreshing, pleasant feeling and easily attract the audience's love; on the contrary, if it is designed to be darker, it will give people a dark psychological implication and make the audience resent the work. Usually you can use cool colors, bright colors or warm colors and strong color contrast to show the sense of brightness [7,8].

7.2. Color Combinations

Another key to the use of color language is the color combination, a good color combination can make the work picture visual impact and relatively strong artistic, of course, to achieve this point, composition and other modeling elements are indispensable. Usually there are three general forms of color combinations. First, the main tone and change, in the color combination generally need to determine a certain main color, the formation of the overall tone, determine the audience's main perception, cater to the design theme, to determine the style of the work. Generally determine the color that occupies a large area first, and then combine with hue, lightness, purity, etc. to produce certain changes. Second, harmony and contrast. The color harmony can make the work picture harmonious and unified.

8. The specific use of color language in the plane computer
8.1. The use of color in print advertising.

Print advertising is very common in our life. In print advertising, if the need for the meaning of color is fully reflected, it is necessary for designers to specifically highlight the advantages of color language when carrying out the design, so that people for the satisfaction of the product packaging requirements, and also as far as possible in two or more contrasting colors to maintain and latent state based on the color language reconciliation work ①. In the process of technical Anji graphic design but also the content and details of the color language more detailed. It is the product color does not clash, look more comfortable, to unify the color, used to make the graphic design more individual and layered [9,10].

8.2. Design packaging for the application of color language.

Color is the most able to make people's emotions change an element, such as people in shopping, often pick a reasonable color combination, a certain sense of beauty of the product, first from the visual sense, and then from the sense of touch and smell into, so the good or bad color combination is the first impression of people for the goods. So the designers in the product packaging design, must pay attention to the use of color language, to be original, visually give people a different feeling, will give people a great visual impact, as long as the product color treasure with good, then has been half of the success.

8.3. The color language should be simple.

In the graphic design, not to be able to use any color to a product, or else the color is complicated and does not reflect the beauty of graphic design, so the use of color language should be minimalist ②. Nowadays, people like simple things, and they can't be too flowery in color matching, which will weaken the strain of color and will definitely produce bad psychological feelings if viewed for a long time. In graphic design, the simpler the color, the better. The strong contrast between different colors can reflect the content of the product, so that people have a better visual experience [11].
8.4. The application of color language in logo design.

Logo design is a non-verbal form of graphic design, which is a general overview of a product. People will naturally have an impression of the product when they see the logo of a product, so the use of color language should also be considered in the design of the logo. Designers should put the color language in an important position in their creation, so that the content of the logo can be reflected and the message conveyed by the logo can be conveyed. For example, the red and blue logo of Pepsi and the pure red logo of Coca-Cola due to the mosquito mother are good examples.

9. Conclusion

The human visual sense is influenced by color, and the human perception conveys emotion, and different colors will have different feeling effects. Nature has spring, summer, autumn and winter, people also have joy, forgiveness, sorrow and happiness, color design has a huge impact on the human physiology. In terms of social activities and nature appreciation, color is objectively a stimulus and symbol for people, and subjectively a behavior and reaction. Whether we understand the physical concepts contained in color or not, when light waves are reflected from the surface of an object and reflected into the viewer's eyes and brain, our emotions are awakened, moved, shocked, amazed, and interested by the color or combination of colors. Although everyone feels color differently, there are many surprising commonalities in our responses to color across time and culture. For graphic designers, these commonalities are often the key to unlocking the aesthetic mystery of color and have a positive effect on them, so it is very necessary to study them. In conclusion, in the age of information technology, it is important to grasp the relationship between the language of color and graphic design, to use color correctly, to improve the quality of the century's works, and to inspire a sense of empathy within people.

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