

Analysis on the Application of Color Matching Methods in Color Teaching of Clothing Design Specialty in Colleges and Universities

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ABSTRACT

Clothing color teaching is a basic course for clothing design specialty in colleges and universities of art, and plays an important role in the teaching system of clothing specialty. The weak link in clothing color teaching is to apply clothing color theory to market brands. Based on years of experience in color planning of Chinese women's wear brands, this paper analyzes the color matching methods of international women's wear brands, explores the operation methods of color matching of international mature women's wear brands, and takes the color matching methods and processes in color planning of Chinese women's wear brands in a season as a practical case, so that students can master how to apply the abstract clothing color theory to the concrete process of clothing color matching display. It is required to make design art education serve not only the cultivation of design innovation ability, but also the needs of social commercialization.

Keywords: *clothing color teaching, practice, color matching method*

I. INTRODUCTION

The outline of the national cultural development plan during the 11th five-year plan period clearly put forward the main tasks of the national development of cultural and creative industries. Clothing industry is an important part of the cultural and creative industry. With the further deepening of the integration of the clothing industry and the new economy, as well as the acceleration of the consumption upgrading, the clothing brand will not only sell tangible goods, but also become a cultural and creative industry integrating manufacturing, retail, management, design, culture, fashion, science and technology and other factors. The demand for creative talents of industries related to clothing will continue to rise. However, there is a certain gap between the training of college clothing design talents and the demand of the market. Clothing design needs to face the production, sales and consumer consumption. At the same time, it is necessary to cultivate the innovative spirit. Therefore, when the clothing specialty of colleges and universities focuses on the cultivation of talents' creative thinking, it is necessary to introduce the practical case of clothing brand into the course system of clothing specialty, which will infuse the core competitiveness of innovation for the product of enterprise, and make the innovative and practical talents of colleges and

universities connect with the market quickly and seamlessly. "For many years, Chinese clothing brands always focus on the innovative research of modeling, and ignore the key of the terminal product sales in the modeling-color relationship with color priority, that is, the final choice of consumers is determined not by the modeling but the color." [1] Thus, Chinese women's wear products lost the market competitiveness. Chinese garment enterprises pay more and more attention to the role of color in product development, product sales, brand value-added and brand competitiveness. Color is the added value of product without cost. Effective analysis and utilization of color characteristics, especially the research and utilization of color as a marketing means, has become an important stage in the development of Chinese clothing brands. At the same time, the goal of clothing color teaching in colleges and universities is not only to improve the students' aesthetic abilities of color, but also to train the students' sensitivity to the popular color in the market and the professional skills of color practice and application, so as to make up for the gap between the traditional teaching of clothing color design and the needs of industrial development, and to accelerate the effective combination of color theory teaching and color design practice in colleges and universities.

Color, as one of the important external characteristics of clothing products, often determines

the fate of products in the minds of consumers. According to a large number of research conducted by the popular color research center in USA, the existence of the "seven-second law" is confirmed, that is, the first seven seconds when people face a product often determine their interest in the product. And the role of color accounts for 67%, which becomes the key factor influencing consumers' choices. In addition, some authoritative color research institutions show that: on the basis of not changing the product modeling, it can bring 10% - 25% added value to the goods by changing the colors. This proves the economic value of color for the design industry. The systematic color planning of clothing brand will make the brand's differential performance in the market more obvious, and provide more emotional elements and purchasing power for the identification and cognition of consumer groups. This paper makes a systematic statistics and research on the color matching methods in the color plan of foreign advanced ready-made women's wear, with a view of analyzing and summarizing the basic ideas and methods of color matching of women's wear brand. Also, it explains the practical operation of color matching in the color plan of Chinese women's wear brand.

On the one hand, clothing color design depends on the choice of different color fabrics; on the other hand, it depends on the combination of different color fabrics. The color matching method refers to the specific design method that the designer should adopt after the fabric selection.

II. COLOR MATCHING METHODS OF ADVANCED READY-MADE WOMEN'S WEAR OF FOREIGN COUNTRIES

A. Design method of monochromatic clothing

1) *Texture comparison of monochromatic and multiple materials*: Different materials and textures are controlled in the same color phase. Different materials reflect light differently, so that the monochrome has rich color vision. For example, the combination of lustrous and lusterless fabrics, and the combination of stereo texture and non-stereo texture will make the color have a rich sense of hierarchy. It is a method that many designers often use to enrich the color. (see "Fig. 1")



Fig. 1. Texture comparison of monochromatic and various materials.

2) *Method of monochrome emphasizing clothing line structure*: According to human body shape and functional requirements of movement, the structure line is processed on the garment slice cutting. Through clever transfer and splicing, the three-dimensional structure of the garment is presented. Under the same color phase, the multi-color visual interference is reduced, the color change caused by the structure line is prominent, and the structure dividing line in the modeling is clear, emphasizing the design concept of the structure line. In a single color, it highlights the designer's emphasis on dart lines and pleat lines formed

by the space between fabric and human body. It is different from the biggest visual effect of monochromatic silhouette. The last prominent feature of monochromatic silhouette method is the silhouette line of clothing, which expresses the sense of color volume; and the last prominent feature of monochromatic line structure method is the rhythm of the lines inside the clothing. The final appearance of the two is different because of the different initial intention of the designer. (see the left part of "Fig. 2")



Fig. 2. Method of monochrome emphasizing clothing line structure (left); Method of monochrome emphasizing clothing silhouette (right).

3) *Method of monochrome emphasizing clothing silhouette*: Rudolf Arnheim pointed out that "shape is one of the characteristics of the object that the eye grasps. We can see that the boundary of three-dimensional object is formed by two-dimensional faces, and the two-dimensional faces are formed by one-dimensional boundary lines. For these external boundaries of objects, the senses can easily grasp them." [2] The single color and weakened fabric texture improve the sense of modeling and color with a sense of volume, making people focus on the clothing silhouette in the right of "Fig. 2". In the 1940s, the monochromatic silhouette design of Dior was a classic. In his opinion, silhouette is an important factor in clothing design. Local details and decorations are designed to strengthen silhouette [3]. The selection of monochromatic phase makes it easier for vision to focus on silhouette. (see "Fig. 2")

B. Multicolor matching

Multicolor matching (including two-tone matching) is often used in color matching system of clothing brands. The following methods are mainly adopted for treatment.

1) Two-tone matching

- Color matching between common colors

It is required to adjust the configuration proportion between common colors to form a new visual attraction. Taking the common colors of black and white as the example, the configuration area proportion of black and white in each season is popular. It is required to refine and analyze the proportion relationship of black and white in international brands, and give the popular feeling of common color configuration. The black area or white area accounts for the main body while the other color is dotted color; and the proportion of black and white area configuration accounts for one half of color matching. (see "Fig. 3")

- Color matching between common colors and popular colors

Common colors and popular colors form a combination of matching colors, which makes common colors fashionable. This is a method often used by clothing brands in color configuration. (see "Fig. 3")

- Color matching between pop colors (see "Fig. 3")



Fig. 3. Color matching between common colors (left); Color matching between common colors and popular colors (middle); Color matching between pop colors (right).

2) Multicolor plane color matching method

- The plane connection color between fabrics (two different colors of fabrics are sewn together), is common used in sports clothing brands. (see "Fig. 4")



Fig. 4. Color matching of plane in sports brands (left).



Fig. 5. Multicolor selection and organization of patterned fabric.

- Multicolor matching and organization of patterned fabric (see "Fig. 5")

3) *Multicolor space with color matching*: The color setting of the group between the clothing categories is often performed as upper and lower color matching, inside and outside color matching, etc. Multicolor space matching is the color matching method adopted by clothing brands in recent seasons. The original multicolor selection mostly appears in the multicolor of pattern fabric itself, the multicolor of fabric decoration (embroidery, printing, etc.), and the combination of multicolor fabrics. Color space matching presents two visual effects.

- Style and multicolor matching (see "Fig. 6")



Fig. 6. Style and multicolor matching.



Fig. 7. Matching of Multicolor pattern fabrics.

- Matching between multicolor pattern fabric and category

Traditional multicolor pattern fabric is often matched with monochromatic fabric; or multicolor pattern fabric is used alone. In recent seasons, international brands often adopt the multicolor organization method. It is required to refine the color tone of each multicolor pattern fabric, and match the colors to each other to make the colors rich without confusion (see "Fig. 7").

The above monochromatic and polychromatic color matching method omits the discussion of common theoretical color matching methods of monochromatic and polychromatic colors, such as the color matching method of monochromatic lightness and purity, the color matching method of polychromatic contrast, etc., and focuses on the discussion of modern color matching methods derived from the basic theoretical color matching. It is the most practical design method for color on the basis of mastering the macro structure of color.

C. Methods of refining and analyzing popular color matching in international ready-made women's wear exhibition

On the basis of determining the overall color tone of popular colors in the current season, it is necessary to select the popular colors and the number of colors in the season, and determine the configuration scheme between the colors in the season.

The color matching method of popular colors presents the specific color use of brand terminal stores. According to different choices of the color matching methods of popular colors in the same season, it extracts the same color matching methods of popular colors in the new season (see "Fig. 8")



Fig. 8. Brands choose poppy red matching with navy blue in 201819aw on the left; Rouge matching with wine red in spring and summer 2020 on the right.

Through the selection of the same brand in different seasons, the evolution of color matching in different seasons is analyzed (see "Fig. 9"). Finally, the potential

regularity of color matching is extracted, and then the color matching that will be popular can be accurately predicted for color planning of brand in new season.



Fig. 9. Refining of different color matching methods of American brand off white in different seasons: yellow matching with black in spring and summer 2019, gray green matching with yellow in autumn and winter 2019-2020, military green matching cream-coloured in spring and summer 2020, and gray matching with green in autumn and winter 2021.

This paper makes longitudinal analysis on the evolution of different color configurations of the same color phase in the international popular color configuration scheme (see "Fig. 10").

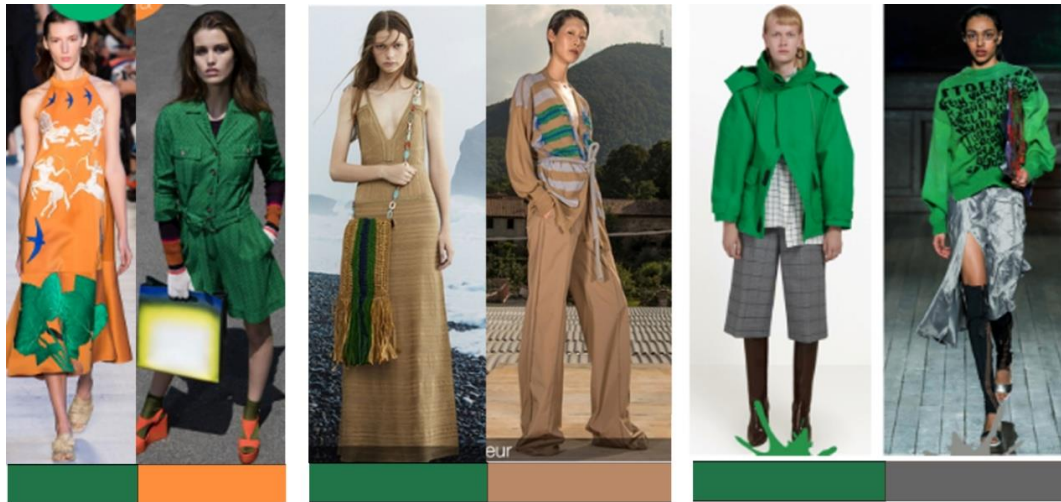


Fig. 10. Color matching changes in different seasons of the same green phase: green matching with orange in 19ss spring and summer; green matching with beige in 2020ss spring and summer; green matching with gray in 2021aw autumn and winter.

III. PRACTICAL OPERATION OF COLOR MATCHING IN THE COLOR PLAN OF CHINESE WOMEN'S CLOTHING BRAND IN NEW SEASON [4]

Through collecting, sorting and analyzing the color matching of the first visual fabric exhibition and the

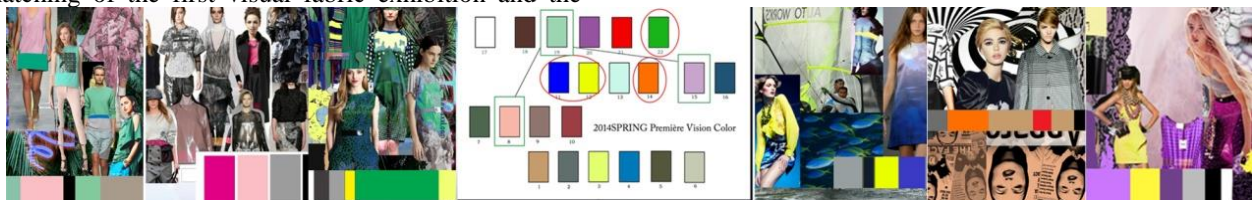


Fig. 11. Color palette of premiere vision Paris and the color palette of international fashion show, which is reflected in the color theme of the brand in the new season.

This paper also makes an analysis of color matching of the brand [5], such as the analysis on color matching of competitive brands, and the analysis on color matching of the brand in the last season.

Competitive brands generally come from Chinese brands, and have similar resource supporting systems (material resources, information resources, human resources, etc.) and similar brand positioning (consumer group positioning, price positioning, etc.). The adjacent or similar shopping mall floor positions make them form a relatively competitive model. Being familiar with and mastering the color selection and application of competitive brands can play a role of knowing one's own and the other's.

It is a very intuitive and effective method to analyze the advantages and disadvantages of color matching application in the last season from the sales records. Through the statistics of sales data in recent quarters, the hot color matching and unsalable color matching are analyzed; the sales data of popular color matching are extracted to analyze the consumption of consumers

international fashion show of PV (premiere vision Paris) of the new season, the popularity of color matching in the new season is shown "Fig. 11".

under the brand positioning, the differences of preferences of different regions of brand sales (south, north, etc.) for color matching, the accuracy of popular color matching positioning, the accuracy of common color matching positioning, and the timeliness of the delivery cycle of each color matching, etc. And vertical analysis of the evolution of color configuration scheme of its own brand is shown in "Fig. 12".

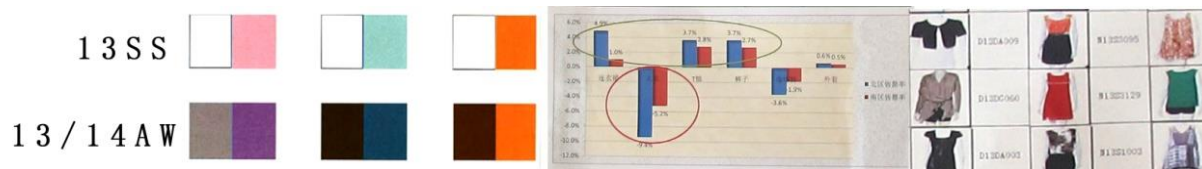


Fig. 12. Evolution of color matching of XX brand in two consecutive seasons: color scheme of gray pinkr matching with white, blue-green matching with white, magenta matching with white in spring and summer 13; gray purple matching with ash, coffee matching with malachite green, orange matching with ochre in 13 / 14AW; and analysis of color matching sales of the brand in the last season.

Through the above selection of color matching in premiere vision Paris exhibition, the extraction of the same popular color scheme of international women's wear brands and the consideration of the color matching of the brand for two consecutive seasons, the practical operation of color matching in the clothing category and the final embodiment of color matching in the clothing store (see "Fig. 13") in the color planning plan of XX women's wear brand in spring and summer 14

(see "Fig. 11") are extracted. It is necessary to complete a series of color matching operations guided by international popular color matching. Combining with its own color matching of brand, the practical operations are presented from the overall color matching group of the series to the color matching between categories until finally in the store color matching.



Fig. 13. The final embodiment of the combination and the store of the gray and pink group of XX women's clothing brand in spring and summer.

IV. CONCLUSION

Based on the research and analysis of color matching methods of international ready-made women's wear brands and the experience of many years of color research and development of Chinese women's wear brands, this paper abstracts the methods and ways of color matching application in the development of new products of women's wear brands. There should make no stacking of surface color blocks among color phases. It should be a kind of expression of color culture rooted inside the brand. At the same time, this paper absorbs the visual attraction of popular color matching methods, and forms a comprehensive color image of the brand among consumers. The color matching method of women's wear brand is introduced into the color teaching of clothing specialty of colleges and universities, which combines teaching and learning organically, so that the color theory of clothing specialty can be practiced in the project of brand color planning. The students are familiar with the color matching method of the color plan of brand company, and the role transformation from students to designers is completed in the latent shift. The effective combination of theoretical teaching and design practice

in colleges and universities can be realized, which inject the core competitiveness of innovation into the products of enterprises, and make the innovative and practical talents of colleges and universities connect with the market quickly and seamlessly. [5]

References

- [1] Xu Zhirui. Modern International Popular Color Marketing Strategy, Popular Color, 2005. (in Chinese)
- [2] (U.S.) Arnheim. Art and Visual Perception [M], trans. by Teng Shouyao, Zhu Jiangyuan. Sichuan People's Publishing House, 1998. (in Chinese)
- [3] Bian Xiangyang. Judgment of Costume Art [M], Donghua University Press, 2006. (in Chinese)
- [4] Hou Fengxian, Ye Wanyin. Discussion on the color planning of brand sincerity in China [J], 4th Asian Color Forum, 2007. (in Chinese)
- [5] Zhu Jieying, Yi Ying. "chromatics — Color Design and Matching", China Youth Publishing House, 2004. (in Chinese)
- [6] Yu Xiaoqun. Analysis of the Application of Color Design Teaching in Art Colleges — Taking Clothing Color Design Teaching as an Example [J], Journal of Zhejiang Vocational Academy of Art, 2015. (in Chinese)