A Brief Discussion on Innovative Thinking in Application of Fabric Art Design

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Abstract

Fabric refers to the material used to make clothing. Fabric reconstruction "is the use of one's own design ideas on the basis of the original fabric and its accessories, enriching the original appearance of the fabric and thus generating the continuation of fabric design thinking. There are actually two approaches to fabric reconstruction: the first approach mainly applies basic design techniques such as flat composition, color composition, and three-dimensional composition to re create, while the second approach directly innovates the material of the fabric to complete the design. For our clothing design products, the choice of fabric directly determines the grade of the clothing design work. Generally speaking, good fabric becomes a fashion trend when draped over a person's body. Unlike the relative limitations of style changes and color matching, fabric design is more flexible. This paper discusses some inspirations in clothing fabric design based on the reconstruction and material innovation of fabrics in clothing. Through the discussion of fabric reconstruction, we deepen our understanding of the secondary plasticity of fabrics, and thus discuss the application of creative design of clothing fabrics in clothing design.

Keywords

The three major components of fabric art design, fabric reconstruction, material innovation, and clothing design application.

1. Fabric Reconstruction

Fabric reconstruction is divided into three methods based on the artistic effect obtained and the design method of reconstruction. The first method is to add decorative design to clothing fabrics, that is, to add decorative materials and splice existing fabrics and accessories, such as adding various lace, yarn, ropes, sequins, shellfish ornaments, various zippers, feathers, buttons, etc. to the spliced fabrics for decoration or embellishment; The second type is the secondary printing and dyeing of fabrics, which involves directly designing flat patterns on clothing fabrics or creating designs based on points, lines, and surfaces in flat designs; The third type is the reconstruction of clothing fabric structure, which includes the redesign of clothing silhouette structure or local structure, deformation design of clothing local structure, reconstruction of clothing local structure, and destructive design of opposite materials. Fabric reconstruction is an extremely creative design method, based on the "three major components" of flat composition, color composition, and three-dimensional composition as the design principle, using regular or irregular splicing methods. In summary, it is a secondary plasticity reconstruction of the "three major components" in the field of fabric creation, applying the basic knowledge of the "three major components" to various art and design fields. In the field of fashion design, there is a classic description of the fashion design process: fashion design is often compared to the "soft sculpture of fabric", so the design of fabric reconstruction can also be called "relief art".

1.1. Concept of Fabric Recycling

Traditional clothing fabrics are usually mass-produced dyed and woven fabrics. The production process of traditional clothing fabrics is that designers first design samples, then make some adjustments to the design samples based on the printing and dyeing process in the workshop, and then enter the production line for large-scale production. In general, the production workshop needs to produce at least tens of thousands of meters or even more of clothing fabrics of the same style. The production volume is so large that we may see clothing made from this fabric sold everywhere in the market. Fabric reconstruction, on the other hand, takes the initial finished fabric as the starting point, modifies the original structure of the fabric, and carries out a second design. It is an extension of the designer's thinking, unique to the market, and an important way for fashion designers to innovate their clothing design works.

In general, fabric reconstruction, as a common expression technique in the fashion design circle, has been widely used in inspiration creation. The fabrics processed through the second process will bring them more creative sparks and enthusiasm during the creative process, and at the same time, they will definitely be more in line with the designer's concept when presenting the final clothing design work. Excellent fabric reconstruction design helps designers rearrange and match the styles and color combinations of existing fabrics to complete their work designs. At the same time, fabric reconstruction is also the expression and transmission of fashion designers' personal styles.

In reality, fabric reconstruction is to some extent a necessary path for fashion designers in their design. In the fabric market, with the changing cycle of seasons, the development cycle of new fabrics has been greatly shortened. For designers, using fabrics too hastily can easily be influenced by the limitations of the fabric. Students, small and medium-sized enterprises, and other groups of people are affected by geography, funding, and other factors, which require high expenses and other restrictions when purchasing new fabrics. As a result, more fashion designers are willing to use limited fabrics for fabric reconstruction to complete their own clothing works.

1.2. Adding Decorative Design in Fabric Reconstruction

The main message conveyed by adding decorative design in fabric reconstruction can be summarized in two words: "splicing". For example, architects use different materials such as bricks, stones, wood, marble, etc. to decorate different buildings and houses, and the fabric design is like bricks and stones. Designers use them to stitch together fabrics of different styles and appearances to create different visual presentation effects. So, fabric reconstruction cannot be separated from splicing.

Splicing is not just a simple process of segmentation and fusion, but through subjective initiative, irregular combination, misalignment, geometric splicing, etc. of fabrics, the visual expression brought by fabric combination is refreshed, making the presentation of clothing more diverse. Cutting the fabric and directly splicing it together, due to the different characteristics of each fabric, it is easy to display different texture features after splicing, resulting in a beauty presented through texture comparison. For example, fabrics with different latitude, longitude, and color will exhibit at least two or more color changes after splicing or layering; When the suede fabric tilts in the opposite direction, there will be changes in the brightness of the light receiving surface and the backlight surface. Silk and yarn fabrics have good transparency, and when stacked together, they will produce subtle and subtle colors; Fur and leather have natural textures and color patterns, which naturally enhance the visual impact of the fabric combination after splicing. Eugenia Loli, A collage artist summarizes how she creates her own collages by saying, "I first find a 'basic' image, and then build a scene around the content expressed by the image. Sometimes I have a clear idea of what kind of image I want, and sometimes I am not sure what I am thinking. I randomly combine the images to see how

many possibilities there are when they are combined together. After multiple experiments, the initial image may no longer be the visual effect presented by the final collage. In most of my works, I try to use my personal language to 'describe' what I think is incomparable Splicing is a unique insight into the plane dimension, which enriches the visual effects of clothing design works, introduces new ideas in the design process, and highlights the designer's design personality.

In the splicing design of fabric reconstruction, many people irresponsibly believe that excellent splicing works are simply stacking any cutting-edge elements that can be thought of into a set or series of clothing, thinking that that is innovation. However, this is not the case. The designers spent countless hours and energy collecting materials and continuing to combine experiments, just to present what they believed to be a perfect artwork in front of people's eyes in an instant. In recent years, with the popularity of cross-border design, the combination of various elements has become possible. Unlike in the past, many blends and splices are for the purpose of blending and splicing. With the improvement of designers' abilities, the blending of fabric texture styles will reach a better level, so the beauty effect generated by the contrast and conflict of fabric textures will be even more extreme.

Adding decorative design, a small part of which is the embellishment of accessory materials. Designers generally use various lace, yarn, rope, sequins, shellfish ornaments, zippers, feathers, buttons and other decorations or embellishments to the already spliced fabric works to create a better visual effect.

1.3. Secondary Printing and Dyeing Equipment for Fabric Reconstruction

The secondary printing and dyeing process of fabric reconstruction can be roughly understood as the combination of modern printing and dyeing techniques with tie dyeing, sewing, packaging, printing and dyeing, spraying, painting, rubbing, calligraphy, carving, and other technologies, and the creation of various textile fabrics through reconstruction. By this method, a new pattern is formed that is different from the aesthetic characteristics of manual printing and dyeing, consisting of flat, monochrome, and multi-color mixtures. The printing and dyeing methods mainly include hand dyeing, wax printing, tie dyeing, hand drawing, and machine printing.

On the basis of promoting and using environmentally friendly fabrics, this article mainly takes natural printing and dyeing art as an example to illustrate the application of tie dyeing in fabric texture design. The natural tie dyeing technology includes steps such as design drawing, binding, tightening, dyeing, washing, knotting, organizing, drying, ironing, etc. I think the most important process among these techniques is dyeing. In dyeing, a handicraft method such as knotting and packaging is mainly used in threaded patterns. The first step in natural tie dye technology is stitching. The pattern is first drawn on the fabric, fixed and then sewn flat or folded with needles and thread. In order to present a better effect, we tighten a part of the fabric with a rope to prevent it from being completely dyed. There are many binding methods for natural tie dyeing techniques, each of which produces different texture effects. The second step is staining. Put the tied fabric into a dye tank for soaking and dyeing. After fully immersing the fabric in the color, remove it and allow oxygen molecules in the air to oxidize the pigment. After about half an hour, bring the dye box for dyeing until the color reaches the required brightness. The third step is rinsing. After fixing the fabric, clean it with clean water to remove impurities. Step four, dry the cleaned fabric; Step five, unravel the line. After the fabric is thoroughly dried, take out the completed work and display the complete piece in front of us. Natural tie dyeing cannot predict the dyeing effect, and the final effect of the pattern can only be seen when it is completed. The patterns formed by each tie dye effect are different, giving people different surprises.

1.4. Structural Reconstruction Design in Fabric Reconstruction

The structural reconstruction design in fabric reconstruction can be two-dimensional, three-dimensional, and comprehensive multidimensional. Using various artistic presentation techniques to create a sense of hierarchy and visual impact on the original and ordinary effects of the fabric. Make clothes more layered, rhythmic, and uniquely create beauty.

The methods of structural redesign in fabric reconstruction mainly include three aspects: additive design, subtractive design, and deformable design.

Additive type "generally refers to the use of methods such as hot pressing, stitching, filling, embroidery, etc. on the basis of current fabrics to form multi-level design effects, such as folds, pleats, drawdowns, bumps, quilts, etc. After a certain process, clothing fabrics can form regular or irregular folds, transforming them from smooth to rough and enhancing their aesthetic appeal. There are many methods for structural reconstruction, such as folding, which refers to the use of special machines and irons to create regular or irregular textures in fabrics; Shrinkage refers to sewing rubber bands or ropes of different thicknesses onto fabric, causing the flat fabric to shrink into a pile and form a three-dimensional material; Concave convex refers to the three-dimensional shape method that combines specific shapes with materials to give clothing a personal aesthetic appeal; Sealing refers to the process of fixing and decorating two layers of fabric by adding appropriate fillers in the middle, as well as enhancing decoration and beautification.

Subtraction type "generally refers to the design of raw materials, using techniques such as metal wire extraction, cutting, hollowing, tearing, hollowing, wear, combustion, corrosion, etc., to remove some materials or damage local areas, forming a virtual real and staggered arrangement effect, and achieving a new design aesthetic.

Deformation type "generally refers to the treatment of the original fabric through wrinkles, seams, front or rear folds, and the use of techniques such as twisting, squeezing, overlapping, stacking, pressure, pressure expansion, bonding, weaving, etc. Deformation processing enriches the spatial level and texture effect of the fabric, giving it a three-dimensional, layered, relief, and rhythmic change processing.

2. Innovation in Fabric Materials

With the development of modern fashion design, it is difficult to make further breakthroughs in appearance, style, structure, and other aspects. More and more designers are focusing on material innovation in fashion design. In the innovation of fabric materials, the design elements of clothing materials follow functionality, that is, comfortable and warm to wear, and aesthetics, that is, beautiful colors, textures, glitter, matte, hollow, transparent, three-dimensional, etc., as well as cutting and sewing performance, even in sewing or joining. Therefore, the material innovation of clothing fabrics is mainly divided into non-traditional material innovation and high-tech material innovation.

To master the design thinking of fabric material innovation, one must first have proficient innovative thinking ability, cultivate good observation habits, repeatedly think about phenomena in nature and social life in daily life, deepen understanding of fabric materials that can be designed, and at the same time, it is important to collect data, especially first-hand data, summarize the characteristics of materials in the data, and then associate, exaggerate, ultimately isomorphic, and combine the visual representations of material texture stored in the mind to form a good fabric reconstruction creative design. So in fashion design, if you want to get a good fabric material design, you must find a suitable material texture as a means of expression for your creativity. Good material design should adopt a form that suits it and express it perfectly, so that the creativity can fully exert its effect. Otherwise, it is equivalent to no creativity, not even design, let alone innovative thinking.

2.1. Innovation in Non-traditional Materials, Fabrics, and Materials

Anti traditional materials are an abstract art form of clothing design. As the name suggests, it is not the application of ordinary fabrics in clothing design. Although non-traditional materials do not meet the practicality of clothing or the practical value of people. But they give people a sense of beauty, or a new exploration of the functionality of clothing. Designers can use their special materials to inspire their design style and form, and integrate abstract art into real life. Even plastic, metal, synthetic materials, 3D printing, and wood used to cover clothing are used in postmodern design.

2.2. Innovation in High-tech Fabric Materials

With the development of technology, more and more high-tech materials have entered the field of clothing design. The high-tech production of new materials with typical technological aesthetics has led fashion designers to invest more in the production and research and development of functional clothing. Intelligent clothing materials composed of special components such as liquid crystals, electronic devices, alloys, phase change materials, etc. have also been widely used in the field of fashion design. In addition, there are a series of color changing materials, waterproof and breathable materials, temperature regulating materials, shape memory materials, etc; Even the most common UV resistant fabrics in sun protection clothing demonstrate the widespread application of modern smart clothing. The technological component in fashion design will continue to increase, and the future of fabric design direction has arrived.

3. Challenges and Development Trends Faced

3.1. Challenges in Raw Materials and Costs

The production of natural fibers such as cotton, hemp, silk, wool, etc. is limited by natural conditions, and factors such as abnormal climate, pests and diseases may lead to reduced raw material production, thereby causing price fluctuations. For example, in recent years, some regions have experienced a decrease in cotton production and an increase in cotton prices due to disasters such as droughts and floods, which has increased the production cost of fabrics primarily made from cotton. Although synthetic fibers have alleviated the pressure on natural fiber supply to some extent, their raw materials mostly come from non renewable resources such as oil. With the gradual depletion of resources, their prices are also facing upward pressure, and excessive dependence on synthetic fibers may also bring environmental problems.

In addition, the development of new fabrics often requires a large amount of research and development investment, from the screening and testing of raw materials to the improvement of production processes, all of which require a significant amount of manpower, material resources, and financial resources. Taking the research and development of some smart fabrics as an example, their use of electronic components, special fibers, and related technologies have resulted in high costs, which to some extent limits the promotion and application of innovative fabrics.

3.2. Difficulty in Technological Innovation

The production of clothing fabrics involves complex processes and equipment, and to achieve innovation in fabrics, technological breakthroughs are needed. For example, developing fabrics with special functions such as waterproof and breathable, antibacterial and deodorizing, intelligent temperature control, etc. requires the comprehensive application of multidisciplinary knowledge such as materials science, chemistry, and electronic technology, which requires high R&D capabilities from enterprises. At the same time, the production process of new fabrics often requires modifications or updates to existing equipment, which

not only increases the cost of the enterprise, but also requires professional technical personnel to operate and maintain. Some functional fabrics may encounter problems such as poor functional stability and low production efficiency in the actual production process, requiring continuous technical improvement and optimization.

3.3. Increased Pressure of Environmental Regulations

Against the backdrop of increasing global environmental awareness, environmental regulations for the textile industry are becoming increasingly strict in various countries, and emission standards and resource consumption restrictions for the fiber manufacturing industry are becoming more stringent. Enterprises need to invest more funds in environmental protection technology transformation to meet the requirements of wastewater, exhaust gas, waste residue and other emissions, as well as reduce energy consumption and resource waste. In addition, consumers' attention to environmentally friendly fabrics is increasing, and they are more inclined to purchase clothing made from environmentally friendly and sustainable fabrics. This also prompts companies to pay more attention to environmental factors in the process of fabric innovation, increasing the difficulty and cost of innovation.

3.4. Market Competition and Changing Consumer Demands

With the continuous expansion of the clothing market, competition in the field of fabric innovation is becoming increasingly fierce. Many brands and enterprises are increasing their research and development investment, launching new fabric products, and the market saturation is gradually increasing, making it difficult for some companies to gain more market share. At the same time, consumer demands are showing a diverse and rapidly changing trend. They not only focus on the comfort and aesthetics of fabrics, but also have higher requirements for functionality, environmental friendliness, personalization, and other aspects. This requires companies to capture market trends and changes in consumer demand in a timely manner, and quickly launch innovative fabrics that meet market demand, posing significant challenges to their market insight, research and development speed, and supply chain response capabilities.

4. Conclusion

Innovative thinking in fabric art design serves as the core driving force that propels fashion design to break through traditional frameworks. Through the dual paths of fabric reconstruction and material innovation, designers are able to surpass the limitations of conventional fabrics and combine artistic expression with functional requirements.

Fabric reconstruction is based on the "three major compositions." By means of techniques such as decorative piecing, secondary printing and dyeing, and structural deformation, it endows the fabric with a multi-layered visual and tactile experience, achieving an artistic transformation from two-dimensional to three-dimensional.

On the other hand, material innovation reconstructs the interactive relationship between clothing, the human body, and the environment through the cross-border application of anti-traditional materials and the research and development of high-tech intelligent fabrics.

In the future, with the deepening of the concept of sustainable design and the iteration of technology, fabric art design will continue to expand in the directions of diversification and intelligence, becoming an innovative carrier that integrates artistic beauty, practical functions, and social value. The exploration in this field not only injects vitality into the fashion industry but also, through the innovation of the material language, redefines the profound connotation of clothing as the "second skin of the human body."

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